American Anthropologist
NEW SERIES

Vol. 31 OCTOBER-DECEMBER, 1929 No. 4

ELEMENTS OF THE CULTURE OF THE CIRCUMPOLAR ZONE[1]

BY W. G. BOGORAS

THE Polar, or to put it more correctly, the Circumpolar zone, forms a compact ring of dry land encircling the terrestrial sphere, which is broken only at two points, the first being Bering strait, the second an opening of sea of much wider stretch along the line Greenland-Iceland-Norway. This second opening forms a passage from the Polar ocean into the Atlantic just as Bering strait forms a passage from the Polar into the Pacific.

On the whole, the Circumpolar zone in its complete extent is subject to similar conditions and so represents an excellent field for the comparative study of a culture, perhaps unique in the world. I may add that the culture of the Polar zone changes very slowly, being preserved in a very primitive state in the ice and the snows of the North as if it were frozen on purpose for such preservation. On the other hand, that culture is more or less uniform even in its variation. Severe conditions of the climate make tribes even of different origin assume the same inventions and appliances in the struggle for life. Thus we find here uniformity of culture and of general ways of adaptation to the natural conditions of the land.

The Circumpolar zone is divided by the Polar circle into two unequal parts: northward from the Polar circle extends the tundra, and southward from the Polar circle lies the forest

[1] Introduction to a university course on the culture of the Arctic and sub-Arctic zones.

border, that is, a belt of undersized trees no more than a hundred kilometres in breadth. This belt, from an ethnographical point of view, belongs to the Polar zone and forms a unit with the tundra. The inhabitants of the tundra, the reindeer, wild and domesticated, and also human hunters and reindeer breeders, leave the tundra for the winter and go to the protection of the forests.

Still further to the south, from sixty-five to sixty degrees of Northern latitude, extends a zone of dense forest which must be considered as sub-Polar or sub-Arctic, and the natural conditions of which form the transition from the Polar to the more temperate climate.

Northward from the tundra extends the ocean, which forms a special zone; we may call it, perhaps, ultra-Polar. In America, the Polar ocean, filled with a quantity of large islands and archipelagoes, presents a special cultural zone inhabited by the Eskimo. This zone has as a typical culture of human groups the hunting of sea mammals, of larger and smaller kind. The tundra, or as it is called in America, the "barren grounds," is actually barren and the scanty human groups inhabiting "barren grounds" have only a very precarious existence.

In Eurasia the relative importance of sea and land is wholly different. The Polar sea is actually important for man only in the far northeast, where the coast line is clearly cut out and sea game come close to the coast so that the hunting of seal and walrus is very well developed. Farther to the west the sea becomes shallow and the coast low and swampy; so it is mostly left uninhabited and only in certain points, more or less distant and isolated, do we find the northern populations coming to the sea for hunting. Thus, on the northern part of the peninsula of Yamal in Siberia and on White island, adjacent to the shore, there lives a branch of the Samoyed, walrus hunters and bear hunters, almost wholly unknown, which could not be included even in the last census of 1926. No scientist has visited these Samoyed. Professor Shitkoff in 1910 spent a week among them in the middle of August, but he had no time to go over to the northern shore of White island, where the hunting of sea

mammals actually takes place. According to some not very reliable information, the Samoyed must have skin canoes and even larger boats made of planks hewn of driftwood. This summer we sent there an expedition of three young scientists, Mr. V. N. Chernezov, Mr. S. M. Ratner, and Miss N. P. Kotovschikova. They were taken there by the state steamer and left for a year with ample provisions and scientific appliances. So, eventually, they will make a detailed description of this branch of the Samoyed.

Still further to the west hunting of sea mammals is performed in mid-ocean; also on Spitzbergen and on Nova Zembla, but this hunting is undertaken mostly by the Scandinavians, English, and Russians, with larger ships and with the expenditure of considerable capital.

On the other hand, the land part of the Circumpolar zone of Eurasia is developed more than in America and it is covered by a culture more ancient and more productive. The surface of land in the Polar zone of Eurasia is larger than that of America (not including islands) and represents about three-fifths of the whole surface of the zone.

The Antarctic zone, which represents for geographers a certain important unit, presents very little interest for the ethnographer, since it never had any population and up to the present time remains outside the range of human culture.

The whole stretch of the Circumpolar zone, from North Cape to Bering strait and from Bering strait to Greenland, presents similar natural conditions. These conditions may be divided into five groups which are mutually connected but nevertheless represent five different points of view. They are: first, cosmographical or astronomical; second, meteorological; third, geographical (geological); fourth, floral; fifth, faunal. The mutual interaction of these five groups forms the natural base upon which the culture of the Far North is constructed. I will try to give brief characteristics of these groups, one after another.

1. Cosmographical or astronomical conditions of the Polar zone are connected with the position of the earth on the ecliptic. According to this position, the north polar circle forms the southern border of the area which has in mid-summer the continuous

day and in mid-winter the continuous night. And so, for instance, on 68-70 degrees of North latitude, we have in the Polar zone three or four weeks of continuous night in the winter, and as many weeks of continuous sunshine in the summer. Therefore, the transition from night to day in spring and the growth of the daytime in the Polar zone is much more rapid and striking. Since the equinox is the same for all cosmographical zones, the growing of the day time from zero to twenty-four hours must go with much greater rapidity than in the south. In this way, after the twentieth of March the day grows as it were by leaps and in the middle of April the glow of the dawn shines throughout the night, and one may work and even read or write even at midnight. The snow, however, is not melted as yet, and the frost in the night is sharp enough. These conditions produce in the north the so-called "white spring," which is the first half of the spring and lasts much longer than the second half, the so-called "green spring." Daytime lasts sixteen, eighteen, twenty, twenty-two hours: the night, all ruddy from the glowing sky, eight, six, four, two hours. The snow melts in the mid-day sun but the currents of the water freeze again at midnight. The difference of the temperature is often +20°C −20°C. These daily changes in temperature work on the psychology of animals and men like a special tonic, awakening and irritating. Only after the awakening of the spring the living beings are ready for the surplus work and intensive sexual and emotional life of summer.

The second half of the spring, the "green spring," begins suddenly with the breaking of ice in the rivers in June and, in 69-70 degrees of North latitude, in July. It is accomplished in three days. Birds of passage come in masses; shoals of fish from the ocean enter the rivers; trees and bushes are budding and sprouting; and everything is green. So nature, the vegetable and animal life, pass from the white spring with its night frosts almost immediately into full summer. Summer comes like a sudden leap, like a favorable storm, like a yearly mutational period or some natural revolution.

2. Meteorological conditions are no less remarkable. While the cosmological conditions refer to degrees of northern latitude,

to the continuous day in summer and night in winter, meteorology deals with questions of the degree of frost, of the intensity of wind and winter storms, and also of the thickness of the ice sheet and the snow layer in the winter. The underground layer of the soil is on the whole always frozen, and large areas of this ever-frozen ground spread far southward even into the temperate zone. In the summer the ground thaws out but, even in the southern part of the Yakutsk province, only for three-quarters of a meter, and close to the Polar sea for half a meter or even less.

On the other hand, the ice sheet on the lakes and on the rivers is two meters thick or even more. When you want to pierce the ice that thick, for setting nets or simply for taking water, you have to cut with an ice pick a round funnel three meters in diameter. The working person will gradually sink down and then completely go under the surface of the ice; only the upper portion of his ice pick will be seen; and still he will have no water and the ice under his feet will be absolutely dry. Even when cut through, the water hole must be cleaned up and pierced anew twice a day, morning and evening, or else the ice sheet will close again and the hole will shut together at least for two feet in thickness.

Then, again, on account of the ever-frozen ground, the rivers begin to freeze not only from above but also from beneath. Very soon, the water flows as if encased in a round tube of ever-frozen material. The surface sheet of the ice is formed of small tablets, thin and brittle as the thinnest glass, but on the very bottom in the water begins to form the bottom-ice, the so-called *salo*, which has the shape and the consistency of half-dissolved snow. In this double manner the river freezes with the utmost rapidity. Shallow currents in the mountains in more quiet places freeze to the bottom. Then the water flows on the surface of the sheet, forming the so-called ***nalhed*** (ice surface water). This water is immediately covered with a new sheet of ice, bright and smooth as polished glass. So in January one may very well break down through this newly formed ice into the coldest water up to the waist and further.

The frost in January is sometimes −70°C. When a person spits

on the ground, the spittle falls down upon the snow like an arrow of ice. Breath comes out of the mouth with a peculiar rasping sound from the smallest particles of vapor freezing into sleet. A horse is surrounded with a thick cloud of its own breathing. A man's face, fingers, and toes are frost-bitten quite unawares. This happens twenty times in a single day after you have succeeded in rubbing them again into warmth.

The breaking of the ice on the large northern rivers has also some peculiar features. Quite suddenly, the ice sheet breaks into huge blocks obstructing the current. The water rises immediately. Blocked ice in all streams cuts away great pieces of the steeper banks, producing genuine excavations. Stretches of surface ground cave in, trees and all. So the breaking of the ice with subsequent blockings and risings of the water develops on a scale truly majestic and gigantic. River shores, from the upper currents down to the very mouth, are covered with masses of floating ice drifted ashore. Since rivers of northern Eurasia flow chiefly from the south northward, their shores down to the 70° of Northern latitude and even to the very ocean are covered with large supplies of driftwood, good for fuel and lumber. Practically speaking, the lower parts of the greater Siberian rivers, even in the middle of the tundra, are surrounded by the artificial protection of the forests.

Joint interaction of astronomical and meteorological agents brings forth a marked influence on various sides of human culture.

For instance, in the spring, during long, almost endless days, the upper surface of the snow thawing under the mid-day sun and freezing again in the night, gradually turns into a hard crust, the so-called *nasi* in the local Russian dialect. This snow crust is of the highest importance for the conditions of spring hunting, of the so-called meat-bringing character: dog, man, and wolf may easily run upon the surface of the snow, especially man supporting himself upon skis. But heavier wild reindeer and elk break through into the inner, soft snow, cutting their legs against the sharp edges of the broken crust, and so they become helpless against their pursuers. The Tungus and the Yukaghir in the north, the Gold and the Samaghir in the Amur country, provide the

better part of their food lasting for a full quarter of a year by just this spring hunting of elk and reindeer on the hard snow crust.

3. Geographical and geological conditions refer to the configuration of the surface of the land and to the character of the ground. The northern part of the Polar zone presents the tundra, as indicated above. Most of the tundra is quite flat and damp, soaked with water like a very sponge, and having a covering of vegetation, chiefly of reindeer moss, which is a kind of lichen. Still there are other varieties of tundra covering the lower hills and even a part of the mountains. These hilly tundras are much drier than the flat country. The tundra stretches are interrupted in some places with rugged mountains, quite naked and desolate, which at certain points, come into the sea, forming huge capes. These capes serve as landmarks over the long extent of low, slimy, seashore. Such are, for instance, in Eurasia, North Cape and Cape Taimir, East Cape, Indian Point, etc.

Still, I must notice that all varieties of tundra and of barren mountains do not belong to special localities in the west or in the east. They are interchanging through the whole extent of the Polar circle, appearing again and again in Europe, in Asia, and in America, and I must indicate that some cultural phenomena appear in the same way spot-wise on the whole stretch of the Polar area; for instance, snow-goggles and a special ring for protecting the hand against the bow-string, etc., have various forms, but each of these forms appears again and again in localities separated from each other by hundreds and thousands of miles.

The influence of these geographical conditions on human culture is also very important. Let us take the question of communication. In winter, throughout the North, communication is carried on with sledges; in summer, the southern hilly part of the zone presents difficulties of communication almost insurmountable. The inhabitants, chiefly various branches of Tungus, may wander around only on reindeer-back or even afoot.

The northern part of the country, quite flat and covered with a maze of rivers and lakes, all having connection, makes walking on foot quite impossible. The usual means of communication is the canoe of varying make, a dugout or a combination of three

thin planks, less frequently a birchbark affair,—all these are propelled either by paddling or by special poles thrust into the bottom, which is usually shallow. The breaks between the waterways are narrow and damp. So the paddler is able simply to push along the wet grass from one watercourse into another. In this way it is possible to pass over from one fluvial system into another even without leaving one's canoe for a single moment. If you were to look on such tundra country in the summer from an aeroplane it would appear to be covered with an endless net of blue veins filled with water and combined into one system. You could perhaps make a journey from the Obi river to the Kolyma having on your feet only the so-called "dry land boots" which are utterly unfit for walking in the water, but you would not spoil your dry land boots because for over-night stopping you could pick out some convenient dry little place. In extra cases, you may take off your boots and wade through the damp grass bare-foot.

4. If we take up now the botanical conditions, we find them also exhibiting several variations. The tundra has a flora of its own. The forest border is of course very different, and the sub-Arctic dense forest is different from both. These three variations extend throughout the whole Polar zone. The tundra has chiefly the lichens and the genuine mosses, some tough sedge-grass and patches of undersized shrubs so rough that they can burn and serve as fuel without any drying. The forest border has more bushes and even a kind of scrub. Undersized trees with crooked trunks and boughs out of shape form islands which on the south join gradually without interruption. Of black wood species there are the birch, the alder, the aspen, the poplar, and several kinds of willow. Birch and willow, and of the conifers the cedar, assume a creeping form. The birch and willow have also some drooping forms with branches hanging down.

Of the conifers there are the larch and the pine, the spruce, and less frequently, the Siberian fir. The larch tree in the forest border quite frequently gets a crooked trunk bent into a kind of spiral, the so-called, in local Russian, Кренъ (*Kren*). The outer layer of that "kren" has a much harder consistency and may therefore be applied for various products.

The sub-Arctic forest has all the species mentioned above, but they are more stately and the forest much more dense than on the northern edge.

As to the animal species, the reindeer feeds on lichen, which is also called reindeer moss. The elk lives on the birch and the alder groves, feeding on leaves and bark. The squirrel requires conifers, since it feeds upon their cones. Even in the growths of the creeping cedar, which in English is called stone-pine, squirrel and sable fare quite well, the squirrel feeding on cedar cones and the sable on squirrel.

For man, the botanical conditions are of direct importance as to construction materials for huts and the fuel for heating them. The forest even on its border represents the best protection against the snow tempests raging in winter. The flat tundra is open to every winter tempest and travellers often are buried under the snow, in the literal sense of the word, as I had occasion personally to experience over and over again. We were buried in drifted snow for twenty-four and even thirty-six hours, after which we had to cut our way outward through the snow hardened by the wind like some solid marble. Dense forest of the more southern belt gives cover against the fiercest storm, and the snow in the forest lies soft and downy like a feather-bed. Therefore, the skis in the forest region are made of thin wooden planks, broad enough not to sink through the snow. Skis of this type are not good for the tundra. The hardened, uneven snow surface of the tundra requires a special shape of ski plaited of cord, the so-called "raven-claws." The natives say that skis of this shape leave on the snow traces like the tracks of raven claws, but more probably this name is connected with some variation of the raven myth so important in the folk-lore of the Bering region.

5. Zoological conditions of the North are as follows: Since the natural resources of the North from the human point of view are mostly of zoological character and the people live on an animal diet we must discuss one after another, first, sea game, mammals and fishes; second, land animals, wild and domesticated; and third, birds.

The northern zone is almost wholly unfit for agriculture, even

for the gardening and raising of vegetables. The principal form of the culture is either the hunting of wild animals or the raising of domesticated ones. Both forms of economics are based on faunal considerations. One deals with wild animals, and the other with domesticated. The difference from a general point of view is not very important, and the raising of animals is only a result and development of hunting of them. The breeding and the growth of animal life in the north, as elsewhere, is based first and last on the abundance of food. The northern zone is not very rich in the number and variety of species, but all the richer in the number of individuals of the same species and in the celerity of breeding and increasing of animal life. The abundance of animal life in the North in some cases is almost beyond imagination, surpassing the chances of the more southern latitudes. From the economical point of view, the animal supplies of the North are quite sufficient not only for the support of its inhabitants but also for export to southern regions more densely populated than the North.

What is the reason for the faunal abundance of the North? As yet we hardly know any answer to that question. In regard to the sea fauna, it is known that the Arctic seas abound with plancton, which forms the base and the staple food for all fishes not strictly carnivorous. The studies of Russian scientists in the White sea and in the nearest part of the Arctic ocean try to establish that part of the northern sea is far better supplied with plancton than the seas of more southern latitudes. In connection with this, fish are more abundant in the north. Moreover, innumerable sorts of fishes living in temperate and warm zones come over to the North and enter northern rivers in order to spawn and propagate. As far as I know, the great rivers of the South, the Amazon, Rio de la Plata, and Mississippi, having their own fish population, have not such masses of wandering fish entering their mouths from the ocean.

The same refers to the birds of passage. Numberless flocks of water fowl, of all kinds of species, come to the North even from the hemisphere across the Equator. According to the conditions of the climate, they may spend only four months in the North against eight months in the South. Nevertheless, the North is their

usual breeding place. Here they have their mating and nesting periods, and the short summer time suffices even for the growing up of the young who, after that, depart along with the older generation towards the South, which is wholly unknown to themselves. To be sure, all the Northern land is covered with bogs and watercourses and there is room enough for the breeding of the young. Nevertheless, this instinct of migration is very remarkable in the birds of passage. One must presume that the migration of birds, with all instincts and exertions referring thereto, is not exceedingly ancient. It could have originated only in the Quaternary period when the configuration of the mountains and the larger areas of land, also the distinctions of the climates, already existed on the same plan as at present. In the Tertiary period the birds of that time probably had no need to migrate northward. The climate of the terrestrial globe was more uniform and especially in the north it was moderate and even warm.

1. Most abundant of all sections of animal life in the North is the class of fishes. Sweet-water fishes also abound in the north. Such are for instance the pike and the burbot. Burbot are caught in such masses on the Kolyma and the Indighirka rivers in the time of early spring that the burbot livers cut out and frozen together form big loads carried across the country with dog teams and pack horses. I have seen caravans of pack horses carrying frozen burbot liver each in two rectangular blocks of fifty kilograms. But maritime species, namely the salmon, are still more abundant. The migratory salmon of the North may be divided into two large groups: salmon of the genus *Coregonus* belong to the Polar ocean, and enter the rivers such as the Kolyma, the Indighirka, the Yana, the Lena, the Yenissei, the Obi. Salmon of the genus *Oncorrhyncus* belong to the North Pacific ocean and enter the rivers beginning from the Anadyr down to the Amur. It is curious to note that Kolyma and Anadyr, the two great rivers of the northeast, which belong to the same ethnical and cultural area and the sources and headwaters of which meet together in the mountains, have fishes of essentially different genera. Kolyma has *Coregonus* species entering from the ocean, and some sweet-water species of *Oncorrhyncus*. Anadyr, on the

other hand, has *Oncorrhyncus* entering from the ocean and some species of *Coregonus* of the sweet-water branch. The species of *Coregonus* have white flesh, those of *Oncorrhyncus*, pink flesh. Both groups in the whole period of spawning do not care for any food and even do not care much for their own life. But *Oncorrhyncus* is much more reckless. In ascending the rivers upstream the fishes of these species perform feats truly acrobatic, since they leap in the more shallow places from stone to stone, wriggle on through damp grass, and in other places mount the waterfalls. Most of their shoals do not return to the ocean and they perish in the river soon after spawning.

White salmon of the Arctic ocean as a rule preserve their life after spawning and descend the stream back to the ocean, though being quite exhausted after the exertions of their sexual life.

According to these points of difference, the pink salmon of the Pacific must be more numerous than the white salmon of the North, and also much easier to catch. Their greater number makes for the great annual loss of life that forms one of the necessary links of their breeding process. After the spawning the pink salmon species, for instance the dog-salmon, changes so much that it is difficult to recognize it as the same kind of fish. Not only does its flesh become lean and tasteless, but its whole shape changes. Its jaws become crooked, forming a kind of beak, and the back assumes a form of hump, like the hunch salmon.

This fall salmon is very poor eating, even for the dogs. On the other hand, dogs in the Pacific as well as foxes, wolves and even sables and ermines, try to catch salmon directly in the water, when it passes on mad with the desire of spawning. Anadyr dogs, when sold to Kolyma people, in their first polar summer would wade into the water, trying all the time to catch some salmon. They would usually snatch some smaller piece of wood and then desist. It shows very clearly the difference in the way of catching pink salmon in the Pacific and white salmon in the Arctic. Northern salmon are not so abundant nor so reckless as to be caught out of the water by the very first dog.

On the other hand, on the rivers of the Pacific thousands of pink salmon, dead from exhaustion, are carried by the wind

directly to the shore and form ultimately strata of dead fish on the river shore, covered with the early snow of October. On these natural storehouses bears and foxes feed throughout the year; and the men take them for the food of their dogs.

Whole tribes and settlements on the shores of the larger rivers of Siberia live exclusively by fishing. This way of living makes the village and the house permanent and the people sedentary. On the other hand, the culture of these tribes is primitive, and psychically the people are passive. The struggle for life is not very fierce. Food is always extant. It is caught in a manner more or less primitive, for instance with fishing weirs, when large creels of willow are choked full with the best fish, or with long nets drawn across the river, which also regularly are white with fish caught in every mesh of the tressed bark or linen thread. Some Chuckchee and Koryak on the Pacific shore do their fishing with a short net pushed into the water by means of a long pole ten meters in length. Since such long poles are but seldom met, shorter pieces of wood are spliced into one single pole with much ingenuity and even with art. The net when being thrust into the water catches immediately about ten fat fishes five to seven pounds in weight. The fisherman draws the net back, takes the catch, and thrusts the net into its former position. In this manner he can get in twenty-four hours, without a boat, and standing on the shore, some two hundred or two hundred and fifty fishes—500-700 kilograms. This fishing work of course is quite exhausting and it is carried on only by the poorest of the natives. The method of such fishing is truly paleolithic, inasmuch as it presents almost a simple gathering of the natural supply of food.

A very important detail of the economic and political life in the north is represented by the fact that the Russian cossacks, hunters, and traders, a counterpart to the Spanish conquistadores, since they also have conquered these immense lands in quite a short almost incredible time, soon after that settled in the north just like fishermen. The first condition of life for them was an immovable house with a regular couch and regular heating. They were averse to wandering around the tundra with the herd of reindeer just as well as they have objected to the constant wandering of

cattle-breeding nomads. So the cossacks intermingled with the fishermen, took wives from among them, and assumed from the beginning their way of supporting life on fishing and hunting. Still, psychologically the hardy conquerors were wholly different from the passive and indolent northern fishermen. But since the women in the new settlements of these Russian creoles and half-breeds and Russified natives were of local origin, the economic and psychical ways of the natives were soon prevalent and the fierce energy of the Russian invaders was soon gone. If we compare the earlier reports of the cossacks with the Siberian *Voyevody* (governors) for instance from the fifties of the seventeenth century, with the reports of their immediate successors half a century ago, we find a very marked change. Early reports relate:

> We were seventeen, we descended the river looking for some source of fame and advantage to His Majesty the Czar, and then we found the native post. It was large and strongly fortified, full of armed men. We fought against them from morning to evening. And God gave us luck: we conquered. We have killed all the warriors and burned down the fort. We took captive women and children and took a multitude of costly furs and ready-made clothes.

In the later reports of the beginning of the eighteenth century, we read on the other hand:

> Our boats are small and the sails are weak. And we do not know how to build large ships, such as were constructed by our fathers.

The change in the psychology of the Russian settlers under the influence of the Russianized native fishermen is the real cause why the Russian parties of cossacks and soldiers in the eighteenth century could not subdue the fierce Chuckchee tribe. The party of Major Parlatsay in 1747 was utterly defeated and he was taken captive and tortured to death simply because the ancient warlike ardor was not there.

Up to the present the mutual relationship between the Russianized natives and the Chukchee reindeer breeders are quite peculiar. From the economic point of view the Chukchee, as the animal breeders, are of a higher stage than the fishermen of the Russian villages, while in other things the Russian and Russianized natives are much higher than the Chukchee. In this way the Russians who were and are the domineering race at the same time

were living like mendicants and parasites on the boons from the wealthy reindeer breeders of the tundra.

2. Hunting of sea mammals in contrast to fishing is practiced on the sea, often even amidst the open water, or on the brink of the ice fields ready to pass away, never by hand from the shore. The psychical character of the maritime hunters is quite different from that of the fishermen. Northern hunters are mobile, always on the alert, ready to go away into the open, given to wandering for many and many miles. The Maritime Chukchee and the Asiatic Eskimo used to go over to America from very ancient times. Even now they make quite long trips across the ocean. The Koryak are much more passive, but they are fishermen rather than sea mammal hunters.

The difference between the fishermen and hunters of sea mammals is expressed even in the choice of the site even on the sea coast. The settlements of fishermen are on the river shore, in the inner estuaries, or on the inland side of some adjacent island. The settlement of a hunter of sea mammals is established on the outer capes, on the windy side of an island, etc. It has all the time a chance for the sudden pursuit of a group of seals, or a big walrus or even a whale.

The species of sea mammals are more or less alike through the Polar ocean of Eurasia. Whale of various kinds and sizes, one or two with precious whalebone, others giving only meat and blubber, white whale and killer whale, and two varieties of walrus. Of seals, ground seal, *phoca barbata*, ribbon seal, *phoca fasciata;* and of smaller seals, *phoca greenlandica*, *phoca vitulina*, *phoca phoetida*, and *phoca haspida*. I could mention several names in Russian creole and native languages, but the trouble is that these names change from one district to another, being given at one time to one species, another time to another. The white polar bear is also to be included among the sea mammals. Of these the natives distinguish several varieties, one not very aggressive in meeting with man, another fierce and bloodthirsty. Sea-mammal hunting is combined with reindeer-breeding among the Chukchee and with fishing among the Koryak and Kamchadal.

Overland animals serve for hunting of a series of overland tribes among which are the Tungus in twelve groups.

Overland hunting represents two branches, one for meat consumption, referring to the herbivora, and another for the fur market, referring to the carnivora, including the smaller kinds such as sable, ermine, etc. Before the advent of the Russians, the hunting for meat prevailed; people did not know what to do with previous furs and other species, while they had no other food except the meat of the game.

The first place among the meat-supplying species belongs to the reindeer, wild as well as domesticated. Wild reindeer are on the constant decrease. The domesticated herds, notwithstanding the losses of the last ten years, still contain more than 2 1/2 million animals. The mutual attitude of wild and domesticated herds is more or less exclusive to each other. The last case of this refers to the middle of the nineteenth century when the Chukchee on the invitation of the chief officer of the Kolyma and receiving at last assurance that no harm should happen to them, moved with their herds westward even across the Kolyma river to the western tundra, and the herds of wild reindeer had to leave the pastures of that country and go elsewhere. Some of them migrated to the Anadyr. Most of them were dispersed and destroyed.

As a result the Yukaghir and the Chuvantzy tribes, who lived on the eastern affluents of the Kolyma and relied for their sustenance on yearly hunts of the numerous herds of wild reindeer in the spring, and in the fall, were suddenly deprived of their means of existence and perished by direct starvation. Some remnants of them emigrated to the lower Kolyma river and took to fishing. Those who stayed on the spot in some cases were driven even to cannibalism.

The other meat-supplying species is the huge elk of Siberia, now mostly exterminated. The last remnants of the former abundance are to be found in the southern course of the Kolyma river, and in the Valley of the Amur.

The brown bear in the forest land, the hare on the tundra, the mountain-sheep in mountainous regions, even squirrel, marmot,

and spermophillus, also serve for food. The Maritime Chukchee and the Asiatic Eskimo consume the meat of the polar fox, and the Reindeer Chukchee occasionally eat mice, but all these supplementary sources are but of small importance.

By the way, the hunting of sea mammals belongs to the first branch of meat-producing character. Meat, oil, and blubber,—these are the principal products of the hunting of sea mammals. Walrus hides and seal skins are used chiefly for the needs of the hunting people. Only the fur seal, the polar bear, and the very rare sea otter supply pelts that are marketable.

The second branch of the overland hunting developed only since the advent of Russian merchants and officers, or in the American part of the Polar zone with the advent of English, American, and Canadian traders.

Three hundred years ago the northern countries were teeming with costly sable and ermine. Now the hunting of such fur-bearing animals is greatly reduced. Squirrels and polar foxes alone go on breeding, thanks to their wide distribution and fecundity.

At all events, several groups of hunters in the north exist in a peculiar way. They cannot get enough meat from the meat-supplying species, so they live exclusively by hunting the fur-bearers, chiefly the squirrel. They sell the pelts, whichever they succeed in getting, and then buy some grain of the lowest quality which they grind by hand grindstone and make into unleavened cakes. So these hunters practically passed from their natural economic state to a condition in which exchange predominates. The Russian peasants of the neighborhood live in the condition of natural economics, for they consume the best part of their own harvest and sell only the surplus of the product.

I have tried to indicate five groups of natural conditions, one after another, and the human culture developed in these surroundings on the basis of the conditions as enumerated above. Man in the North lives wholly under the power of nature, and if we take three groups of cultural phenomena, the material, the spiritual, and the social culture, we notice that all of them are influenced with great force and strictness by several groups of conditions, mentioned above.

I will cite two examples, referring, respectively, to the material and the spiritual culture of the northern tribes.

The first is connected with the question of fuel. Fuel is scarce on the tundra and the inhabitants had to work out a method of heating without any fuel at all. The Chukchee, the Koryak, and the Asiatic Eskimo have their sleeping room heated chiefly by the accumulation of human natural heat, which can even be regulated by accepting new guests or, in case of excessive temperature, by trying to send away some who constitute the surplus. The Eskimo construct for heating purposes an underground house with an inner sleeping room, the protective walls of the underground room being made of earth and sod.

The Reindeer, and partly the Maritime, Chukchee construct their huts and the inner sleeping rooms from the best reindeer skins. This translation from one material into another reminds one of the Chukchee language which is also the transfer of the Eskimo morphology into some unknown linguistic elements of ancient Asia.

The second example refers to the spiritual culture. It deals with the folklore. Northern people of whatever race or culture stage, having little else to do throughout the endless nights of winter, fill their leisure with working out the elaborate schemes of stories adorned with the finest embroidery of imagination. That accounts for the development of folklore among the Northern tribes and even for the development of Scandinavian epics among the Norsemen in Iceland in the twelfth and thirteenth centuries.

With the Maritime Chukchee and Asiatic Eskimo the folklore develops in conditions of a different kind. These two tribes often even in the midst of winter, being short of stored provisions, must get their sustenance from the continuous search for seals. A fierce winter storm, keeping them at home sometimes for several days, may put them on the brink of starvation and what is still worse, deprive their lamps of the light-giving oil necessary for dispelling the oppressive darkness. And sometimes the best hunters will come out through the storm always in pairs, joined together with a long thong in order to feel always sure of the

mutual touch. The folk-tales are full of such desperate attempts when the people begin "to get lean in their marrow-bones." These stories are usually repeated at night, when the inmates are pent up within the sleeping room, and they are considered as the best incantations against the storm. The close of the tales is also an incantation of its own, "Waháó, yóočhin tínmûgan," "Oho, I killed the tempest!" By the way, stories related during the winter storms must refer chiefly to storms, to work against them the more efficiently. The connection of meteorological conditions with the evolution of folklore is quite clear.

Some of the old women happen to know so many tales that day after day they will be able for a month or more to present ever new subjects, intertwining together the subjects and plots with such great art, that no one would even notice the difference.

Out of these natural conditions the culture of the North has developed. Though we call it primitive, we must not compare it with the most primitive culture of some tropical tribes, such as the Botocudo or the Bushmen. These last tribes go around quite naked, have no house to speak of, and feed on anything that comes their way and which they can gather without much effort in the wood or on the prairie. Their economics belong to the earlier stage of the so-called collector type. They store no provisions, and notwithstanding the abundance and even the lavishness of natural supplies in the south, they live on somehow, passing from one spell of hunger to another, interspersed with a much shorter period of reveling in plenty.

Now in the Northern conditions, one cannot go on without clothes, house, and storage for the winter. Even primitive man must take care of his future, otherwise he will die. This is why the culture of the North is not only of a well developed type but even has a special development.

The Eskimo culture, which represents the best developed variation of the culture of the North, abounds in implements and accommodations of amazing fitness. Some of these were imitated not only by their nearest neighbors, far enough to the south, but even by the civilized part of humanity, such as the Russians and

Americans. The whaling harpoon is an Eskimo creation, but it was imitated by almost all the tribes which practise whaling.

In the classification of the cultural types of the North, we find some types of local origin, such as fishing, hunting, reindeer-breeding, and other types of a higher culture, which came over to the North in later times, brought over by immigrants from the south. I will start with the classification of the indigenous cultures.

As for implements and weapons with some few exceptions, the tools of the North are Neolithic. To be sure in the last hundred years some metal work and the art of weaving spread among the natives in imitation of the Russians, and in the Far East, of the Chinese. Still, even the shape of the tool or the weapon made of metal, curiously imitates the form of the stone or bone implements. For instance, the Reindeer Chukchee use instead of the axe a small hatchet, an actual tool of the Neolithic period. The local blacksmiths of Russian origin prepare such hatchets specially for Chukchee use. Nevertheless, most of the northern tribes have even some blacksmiths of their own, capable at least of mending the simplest iron implements. Some of these tribes still have an idea that the art of the blacksmith required skill and knowledge of no common kind. The Chukchee, for instance, in some tales borrowed from Russians described a young prince, the son of the King, as having a face as intelligent as a blacksmith's.

According to the chief pursuit bringing the means of life, the northern culture may be divided into several types. I must mention that notwithstanding their primitive character, the northern culture created two branches of animal breeding, the breeding of domesticated reindeer and that of driving dogs, peculiar to the northern zone. Within that zone, however, it is imitated from the native tribes by the most civilized immigrants of later arrival. The American settlers in Alaska imitated Alaskan Eskimo dog-driving and Siberian reindeer-breeding, which has prospered and increased at such an amazing rate.

Also in fishing and hunting, the northern natives have created various implements, afterwards imitated not only by later immigrants from the South, but also passed over to the neighboring people of more southern latitudes. Such is for instance the small

Siberian trap for ermine and other smaller game, which has spread through the whole temperate zone of eastern Eurasia down to the Bashkir and the Kirgiz. The same is the case with the larger striking trap for foxes, the deadfall for foxes and walrus, etc.

Moreover, we can see that in the economics of hunting the fur-bearing animals the northern natives of the so-called primitive tribes are the most circumspect in looking out for the future. While the Russian invaders from the south ruthlessly destroy the best cedar forests with their axes or careless fires, and exterminate the "green" squirrel when the "unripe" peltry is not fit for selling, the Tungus or Ostyak, when undisturbed by neighbors, will proceed with much more forethought, trying to leave some of the foxes and squirrels for his last days and even for his children.

I will only repeat one of the paragraphs of my memoir on the Conditions of Life of the Lesser Tribes of the North, presented in 1923 to the Central Executive Committee of the Soviets: The principal riches and resources of the North are not represented by the numberless shoals of fish nor by the endless droves of wild geese and swans, nor by herds of reindeer, wild and domesticated, and not even by the fields of coal or veins of gold to be brought into the mining work; the real riches of the Far North, the most important of all, are represented by the northern people, who are the only means and agents to work out profitably all the natural resources of the North and to bring them in touch with human culture. Without the northern tribes, the riches of the North will be left without use and without workers.

After these preliminary remarks, I will indicate the chief types of the Northern culture as the following:

1. Fishing.

2. Hunting, with two subdivisions: (a) Meat-providing branch; (b) Fur-providing branch.

The other subdivisions, according to areas of exploitation are: (1) Overland hunting; (2) Sea-mammal hunting.

Economic pursuits, as mentioned above, less frequently appear in the exclusive form, but oftener as combinations of two or three types, with one prevailing, or with two or three of equal importance.

So, for instance, the hunting of fur-bearing animals is combined either with fishing, or with overland meat-providing hunting, or with hunting sea-mammals. Some tribes combine everything,—fishing, overland meat-providing, hunting of fur-bearing animals, and hunting of sea-mammals. Such are the Maritime Koryak and the Gilyak. The Maritime Chukchee have very little fishing, since the Chukchee peninsula has no rivers for the fish to enter for spawning, and salmon do not go this way; and, of course, the inland Tungus or Yukaghir have no hunting of sea-mammals.

The third type refers to the higher cultural stage, since it deals with the breeding of domesticated animals, viz., reindeer.

Still the breeding of reindeer in all its ways and methods is so primitive as to rank on a level with hunting and fishing.

Moreover, in several cases, the reindeer-breeders, though economically better off, are in other respects even behind their fishing or hunting neighbors, who for instance practice various handicrafts and then exchange their artifacts for the produce of reindeer-breeding.

Reindeer-breeding also enters into combination with hunting and fishing. In northern Eurasia, as a general rule, the tribes of hunters do not wander afoot, but have some reindeer to supply the necessary means of locomotion. The Tungus hunter cannot very well do without riding reindeer. Reindeer mounts supply the Tungus with the means for wandering over immense areas, and only by means of the riding-reindeer could the Tungus spread over 10,000 kilometres in extent from the eastern affluents of the Obi river down to Kamchatka and Saghalien, and from 70° of Northern latitude in the tundra down to the south, beyond the Chinese border. On the other hand, extensive reindeer-breeding does not come very well into combination with fishing, because fishing presupposes a stay on the shores of lakes and rivers, which have not sufficient lichen pastures and are too much pestered by mosquitoes and reindeer flies. Extensive reindeer-breeding presupposes continuous wandering with the reindeer, while fishing is much more sedentary.

At the same time, the better half of the northern tribes include both types of pursuit practiced side by side, reindeer-breeding and fishing, or, with the Chukchee, hunting of sea-mammals. Some tribes are divided into two branches, the reindeer-breeding, who wander throughout the tundra, and the sedentary, dwelling close to the water and out of the water. The ways of life of both these branches are often not only different but even antagonistic, as with the Chukchee, where the driving dogs of the sedentary people represent the bitterest foe of the reindeer herds, and so the reindeer breeders cannot even come into the neighborhood of the Maritime villages.

Still, both parts of the tribe are conscious of their natural tie and consider themselves to be of the same tribe. They intermarry freely and in case of need act as one unit. It is open to question whether they represent one natural unit practising two pursuits of life, or two different units, who have brought out two different ways of life and then gradually blended.

INTERNATIONAL HOUSE,
500 RIVERSIDE DRIVE,
NEW YORK CITY

THE MATERIAL CULTURE OF SPANISH-INDIAN MEXICO

By ROBERT REDFIELD

THE material culture of present-day rural Mexico, in contrast to the non-material culture, preserves almost unmodified a large number of pre-Columbian traits. The small number of the Conquerors brought with them no great economic system with which to displace that already in operation among the Indians. They decapitated the aboriginal society, as it were, removing gods, priests, and calendars, but they left the machinery of everyday life; and indeed became themselves a part of it. Quite opposite to the situation among some other aboriginal groups that survive as an enclave of modern civilization, in rural Mexico an Indian worships the gods of the invader and uses his kinship terminology, but the materials and techniques of his practical life are often much the same as those of his ancestors.

Bandelier gave us a short account[1] of the material culture of Cholula, in the State of Puebla, and Starr has scattered notes[2] on the material culture of many villages in southern Mexico. I do not know of any systematic outline of the material culture of any one Mexican village. This is the excuse for publishing the following notes, which summarize some observations made in the course of an eight months' stay in Tepoztlan, State of Morelos, during 1926–27.[3] Tepoztlan is by no means an unusually conservative Indian community. It is almost entirely Indian in blood and bilingual in speech, but all Tepoztecans make trips to Cuernavaca, and not a few are familiar with Mexico City. It

[1] A. F. Bandelier, Report of an Archaeological Tour in Mexico in 1881. Paps. Arch. Inst. Am., Am. Ser., 2: 95–99, 120–152, 1884.

[2] Frederick Starr, Notes upon the Ethnography of Southern Mexico. Reprinted from vols. 8 and 9, Proc. Davenport Acad. Nat. Sci., 1900.

[3] Made possible by a fellowship granted by the Social Science Research Council.

represents the wide middle-ground of rural Mexican sophistication.

With the exception of ironworking, which soon made obsolete the Indian techniques in stone, bone, shell, and copper, most of the elements contributed to the material culture by the Spaniards supplement rather than supplant technical systems of the Indians. Pre-Columbian patterns persist especially in the house, in house furnishings, and in cookery. Here there are many contributions from European culture, but these remain of secondary importance. The old techniques survive also in transportation, but there the post-Columbian contributions are of much greater relative importance. Finally, clothing, especially that of the women, is an aspect of material culture where Indian elements have been almost entirely supplanted by European.

The house-group is the dwelling of a single family with accompanying outbuildings. As house sites are almost always walled off from the streets and as houses are rebuilt upon the rubble of earlier structures, the house, except near the central plaza, is usually above the level of the street. The house is always rectangular. The walls are most commonly of adobe; but may be of rough stones set in a mud mortar, or withes, wattle, or cornstalk. The roof, except where poverty prescribes mere thatching, is of tiles (a European improvement); the roofs are almost flat. There is ordinarily only one entrance to a room. Where there is more than one room, passage from one to another may most commonly be effected only by going outside and entering the single entrance of the adjoining room. Window openings, except in the more Europeanized houses near the plaza, are rare. Glass windows and screening are practically unknown. Floors are of dirt.

Where wealth or Spanish influence has been stronger, most particularly in buildings near the central plaza, the form of the house may be modified in one or more of the following respects: The rooms are grouped around a patio. A roofed corridor runs around the inside of this. Or, much more commonly, the single room is fronted by a roofed porch, built integral with the house. The roof of this porch is supported by columns; there may be

an arch or two. The roof may be peaked. The porch (*corredor*) and perhaps also the house, has a brick floor. There are several windows; some of these contain iron grilles. The walls are plastered and perhaps tinted.

However mean or however important, the house is ornamented with a number of flowering plants, usually potted in oil cans, and standing outside the house on a rack.

The tripartite house division into *sala*, kitchen and storehouse, emphasized by Bandelier[4] and well illustrated by Starr,[5] is not always clearly marked. Sometimes the kitchen is merely a flimsy lean-to against the house, or is in a corner of the *corredor*, or is even in a corner of the single room. But more often it is a separate room or even an entirely separate structure.

The storehouse (S., *troje*)[6] is practically always present, and is usually placed immediately in front of the dwelling. It occurs in three forms, all of which are probably of entirely pre-Columbian design. The *ohuatlapil* (N., *ohuatlapilli*) is most common. This is circular, about six feet high and of varying diameter; it is made of vertical cornstalks bound together with rope. It contains maize on the cob (S., *mazorca*). Also made to contain *mazorca* is the *cincolote* (N., *zincolohtli*). This is square, of poles laid horizontally, one pair upon another at right angles to the first until a structure is raised tall enough to contain the maize to be stored. The *cuezcomate* (N., *cuezcomatl*) is a vasiform granary, plastered inside and out with clay. In it is kept shelled corn.

Perhaps every fourth dwelling has a sweathouse (S., *temazcal*; N., *temazcalli*), well known as a part of the pre-Columbian house group. This is made of stone set in mortar. It is rectangular, approximately square, and about five feet high at the center. The roof is low-peaked. The one entrance is barely large enough to permit entrance of a man on hands and knees. Although occasionally now used merely to achieve cleanliness, its use, as in pre-Columbian times, is chiefly therapeutic.

[4] Op. cit., 129.

[5] Frederick Starr, Indians of Southern Mexico. An Ethnographic Album (Chicago, 1899), pls. 44, 45, 46, 47.

[6] "S." indicates term used in Spanish discourse, "N.," term used in Nahuat discourse.

These are all indigenous features. Although bees and turkeys were domesticated before the Conquest, it is not clear to what extent the beehive—a simple wooden box—and the fowl-house preserve pre-Columbian elements. The fowl-house (S., *gallinero*; N., *pizcalli*) is a part of nearly every domestic establishment (but in many homes some of the chickens perch on ladders in a corner of the dwelling). It is usually built of stone, to keep out marauding carnivores, and has about the size and form of the sweathouse, except that the roof is tiled. To protect a horse or burro a thatched or tiled roof is erected in a corner of the yard. Something in which to store water completes the house-group. This is either a plastered tank (S., *pila*) or a large jar (S., *tinaja*; N., *acomitl*), or merely an alcohol tin.

Neglecting for a moment the additional furnishings of the more urbanized and well-to-do, one may declare the domestic equipment within the house to be almost entirely pre-Columbian. The kitchen is the center of domestic activity and around it cluster most of the accessories. Four features are inevitably present in all houses, of whatever poverty or pretensions. These four features vary hardly at all in form or position,[7] and preserve, hardly modified at all, pre-Columbian form and function. These four are the hearth, the griddle, the grinding-stone, and the pot. The hearth (S., *tlequil*; N., *tlequilitl*) is sometimes no more than three stones set in a triangle to support the griddle; but more often it is of many stones, plastered, and horseshoe-shaped. Upon it fits the griddle (S., *comal*; N., *comalli*), a flat, circular tray, which occurs in only one diameter (about eighteen inches). Although griddles of iron are common in the cities, in Tepoztlan it is always of clay. When not in use the griddle stands on edge at the back of the *tlequil*. The three-legged grinding-stones (S., *metate*; N., *metlatl*) with long hand-stone (S., *metlapil*; N., *metlapilli*) are of the well known pattern. They are of andesite. The pot in which the maize is cooked (S., *olla de nixtamal*; N., *nexcomitl*) stands beside the hearth.

In some houses the *tlequil*, which burns wood, is supplemented

[7] Cf. Bandelier, op. cit., 138; Starr, Notes on the Ethnography . . . , 3.

an arch or two. The roof may be peaked. The porch (*corredor*) and perhaps also the house, has a brick floor. There are several windows; some of these contain iron grilles. The walls are plastered and perhaps tinted.

However mean or however important, the house is ornamented with a number of flowering plants, usually potted in oil cans, and standing outside the house on a rack.

The tripartite house division into *sala*, kitchen and storehouse, emphasized by Bandelier[4] and well illustrated by Starr,[5] is not always clearly marked. Sometimes the kitchen is merely a flimsy lean-to against the house, or is in a corner of the *corredor*, or is even in a corner of the single room. But more often it is a separate room or even an entirely separate structure.

The storehouse (S., *troje*)[6] is practically always present, and is usually placed immediately in front of the dwelling. It occurs in three forms, all of which are probably of entirely pre-Columbian design. The *ohuatlapil* (N., *ohuatlapilli*) is most common. This is circular, about six feet high and of varying diameter; it is made of vertical cornstalks bound together with rope. It contains maize on the cob (S., *mazorca*). Also made to contain *mazorca* is the *cincolote* (N., *zincolohtli*). This is square, of poles laid horizontally, one pair upon another at right angles to the first until a structure is raised tall enough to contain the maize to be stored. The *cuezcomate* (N., *cuezcomatl*) is a vasiform granary, plastered inside and out with clay. In it is kept shelled corn.

Perhaps every fourth dwelling has a sweathouse (S., *temazcal*; N., *temazcalli*), well known as a part of the pre-Columbian house group. This is made of stone set in mortar. It is rectangular, approximately square, and about five feet high at the center. The roof is low-peaked. The one entrance is barely large enough to permit entrance of a man on hands and knees. Although occasionally now used merely to achieve cleanliness, its use, as in pre-Columbian times, is chiefly therapeutic.

[4] Op. cit., 129.

[5] Frederick Starr, Indians of Southern Mexico. An Ethnographic Album (Chicago, 1899), pls. 44, 45, 46, 47.

[6] "S." indicates term used in Spanish discourse, "N.," term used in Nahuat discourse.

These are all indigenous features. Although bees and turkeys were domesticated before the Conquest, it is not clear to what extent the beehive—a simple wooden box—and the fowl-house preserve pre-Columbian elements. The fowl-house (S., *gallinero*; N., *pizcalli*) is a part of nearly every domestic establishment (but in many homes some of the chickens perch on ladders in a corner of the dwelling). It is usually built of stone, to keep out marauding carnivores, and has about the size and form of the sweathouse, except that the roof is tiled. To protect a horse or burro a thatched or tiled roof is erected in a corner of the yard. Something in which to store water completes the house-group. This is either a plastered tank (S., *pila*) or a large jar (S., *tinaja*; N., *acomitl*), or merely an alcohol tin.

Neglecting for a moment the additional furnishings of the more urbanized and well-to-do, one may declare the domestic equipment within the house to be almost entirely pre-Columbian. The kitchen is the center of domestic activity and around it cluster most of the accessories. Four features are inevitably present in all houses, of whatever poverty or pretensions. These four features vary hardly at all in form or position,[7] and preserve, hardly modified at all, pre-Columbian form and function. These four are the hearth, the griddle, the grinding-stone, and the pot. The hearth (S., *tlequil*; N., *tlequilitl*) is sometimes no more than three stones set in a triangle to support the griddle; but more often it is of many stones, plastered, and horseshoe-shaped. Upon it fits the griddle (S., *comal*; N., *comalli*), a flat, circular tray, which occurs in only one diameter (about eighteen inches). Although griddles of iron are common in the cities, in Tepoztlan it is always of clay. When not in use the griddle stands on edge at the back of the *tlequil*. The three-legged grinding-stones (S., *metate*; N., *metlatl*) with long hand-stone (S., *metlapil*; N., *metlapilli*) are of the well known pattern. They are of andesite. The pot in which the maize is cooked (S., *olla de nixtamal*; N., *nexcomitl*) stands beside the hearth.

In some houses the *tlequil*, which burns wood, is supplemented

[7] Cf. Bandelier, op. cit., 138; Starr, Notes on the Ethnography . . . , 3.

by the brazier (S., *brasero*) of Spanish origin. This burns charcoal. It may be of iron and brought from the city, or it may be a homemade copy in stone and clay. Only a small part of cookery in Tepoztlan is done on the brazier.

Most of the other articles which contribute to culinary technique are Indian, not European. The small andesite mortar (S., *molcajete*; N., *molcaxitl*) and the pestle (S., *tejolote*; N., *texolotl*) are used chiefly for grinding chile. Two of the three common forms of basket are likewise pre-Columbian in general character. These are the forms without handles: the *chiquihuite* (N., *xiquihuitl*), which is stiff, as wide as it is deep, and of wickerwork and the *tompiate* (N., *tompiatl*), which is flexible, twice as deep as it is wide, and woven of soft reed. The other basket, which is of the shape of an ordinary European market basket, with a handle, has no Nahuatl name (it is always called *canasta*) and is apparently a form introduced by the Spaniards. Its principal use is in marketing; therefore it is carried only by women, and on the left arm under the *rebozo*. The whole forms a *canasta-rebozo* minor complex of post-Columbian development. The other two baskets are used for the storage and transport of food (the *chiquihuite* is also used to strain honey), and may be carried by either man or woman.

Mexican pottery has been much modified since the Conquest. Many forms are European, and the ware is in general inferior. Shell-decorated Cuernavaca pottery is common in Tepoztlan, and there are occasional pieces of glazed and painted Oaxaca ware. The ware in general use in cookery is the plain ware of Toluca. The pot (S., *olla*; N., *xoctli*) preserves the ancient form; the pitcher (S., *jarro*) and the saucer (S., *cazuela*) are more European than Indian and are mentioned by the Spanish names only.

Minor elements in the culinary paraphernalia are the shallow wooden boat-shaped mixing bowl (S., *batea*), the wooden spoon (S., *bateidor*), and the small, rectangular, handled fan (S., *aventador*) with which the fire is blown up. For picking fruit from trees a cage-like picker of cane, on the end of a long pole, is employed. This is called (S.) *canastilla* or (N.) *acatecomatl*.

Other house furnishings vary considerably with the wealth and education of the owner. Characteristically, however, the bed (S., *cama*; N., *tlapechtli*) is a mat (S., *petate*; N., *petlatl*) spread on the ground or on a low wooden platform. Often another aboriginal form of bed is used: splints of Mexican bambu (S., *otate*; N., *ohtlatl*) are stretched in both directions across a framework of low posts driven in the ground. Tables are common but often absent in poorer houses. The backed chair is not rare, but much commoner is the low, backless bench. Although occasionally reminiscent of the pre-Columbian *icpalli*, it nevertheless is generally European in form. No adult sleeps in a hammock, but babies are usually cradled in a flat swinging framework, which is homemade. This resembles other Indian cradle-frames, but bears the Taino name *hamaca*.

Certain domestic accessories of European origin have become firmly associated with the aboriginal elements and are always found in the house. Chief among these are the steel knife, the small iron kerosene flare (S., *candil*), the candle, and the alcohol tin (S., *bote*) in which water is carried and stored. Two of these tins are yoked together and swung over the shoulder. In this device (S., *aguantador*), of course European in character, water is hauled by the men. A woman carries only a single tin.

A domestic shrine is found in most houses. This may be no more than a printed or painted picture of a saint, but more commonly it is a carved and painted wooden figure, usually a Virgin or a Christ. This may be only a few inches high, or as much as six feet. Most are from early Colonial times. In front of this figure an incense burner (S., *sahumeria*; N., *popochcomitl*) is placed. This is of black glazed pottery. In it copal gum is burned. Flowers are also placed before the figure, in bottles or vases, and pictures of other saints are hung near the image. This shrine is the center of domestic worship and ritual. Candles are burned before it on feast days; here the infant Christ is "put to bed" on Christmas Eve and taken up on Candlemas; before this image are placed gifts brought on birthdays or those brought by a boy's parents during the negotiations leading to a marriage with a daughter of the house.

Any property not in use is kept on plain wooden shelves or in covered wooden chests. Extra clothing is hung on nails. Walls are frequently decorated with pictures cut from newspapers, with sentimental picture postcards, and with little clay toys and ornamental dishes brought from other villages.

This description of the domestic equipment relates to most of the houses in Tepoztlan. A conspicuous minority, however, as has already been indicated, enjoy elements of modern industrial civilization. A house of this limited class may possess a few china dishes, or a few glasses, some metal pans, perhaps a sideboard or a metal bed or even a phonograph. The sewing-machine alone, however, among modern machines, has become a part of the general Tepoztecan material culture; it is found in all parts of the village and in houses otherwise Indian in character.

Cookery[8] has been but slightly modified by European elements. The most important foodstuffs contributed by European culture are beef, pork, sugar, rice, chickens, eggs, and milk. Less important contributions are potatoes, lima beans, wheat flour, chickpeas, citrus fruits, and spices. The maize-squash-beans complex remains, however, the basis of cookery. These staples were and still are cooked with chiles and tomatoes. Honey is still used as a sweetening, but has been largely supplanted by cane sugar. Cinnamon has displaced the native vanilla. The apparatus of cookery and the accompanying techniques are almost untouched by European influence. Maize is boiled with lime and ground on the *metate* to a dough which is the basis of a variety of foods. Chief among these is the *tortilla* (N., *tlaxcalli*), the inevitable griddle-bread which accompanies every meal both as a food and as an eating utensil. The principal variations on the *tortilla* are forms to which shortening has been added (S., *itacates*, N., *itacatl*; S., *clacloyos*; N., *tlatloyos*; S., *gorditas*), and *tortillas* filled with chiles, beans, or other foods (*S.*, *memelitas*, N,. *tlaxcalmimilli*; S., *tacos*; S., *migajes*, N., *xalli*). These variations are devised to carry food away from the house or keep it edible

[8] The statement as to cookery is based on extensive materials collected by Margaret Park Redfield.

some time after preparation. The same dough, stirred in water and strained, forms the basis of gruels (S., *atoles*; N., *atolli*), which are flavored in several different ways. These were a daily food in pre-Columbian times, but in Tepoztlan today they do not constitute a regular part of the daily fare.[9] To the same dough fat is added, and sometimes other ingredients, to prepare *tamales* (N., *tamalli*), which are rolls of this dough boiled in corn husks. Although the sweetened *tamal* is prepared to sell at the nearest railway station, in Tepoztlan itself the *tamal* is never a part of the daily fare; but, as in ancient days, is eaten only at fiestas.

Another pre-Columbian food category of undiminished importance includes the *moles* (N., *molli*). These are highly spiced sauces served with pieces of boiled meat. The spices are ground in the *molcajete* or on the *metate*. There are three *moles*, two festal and one secular. The last is a relatively simple sauce, chiefly of chile, served with pork or beef. It is often eaten at breakfast. *Mole verde* is a more complex combination of elements, served usually with beef. It is never served without *tamales*, and only at fiestas celebrating a *santo*. *Mole poblano* (or "turkey mole," S., *mole de guajolote*; N., *huexolomolli*) in Tepoztlan may be made of as many as nineteen ingredients. It is always served with turkey and only on the occasion of very important fiestas, characteristically weddings and baptisms.

Another category, *tortas*, includes vegetables, potatoes, etc., which are ground, mixed with egg, fried, and served with chile. These represent an application of the aboriginal grinding- and chile-patterns to introduced foods.

The cultivated and purchased foods are supplemented with a number of wild vegetable foods and occasionally game.

It will be observed that a very few techniques of cookery are employed. Foods are boiled, fried, or toasted. In spite of the presence of the oven, used by bakers and pastrymakers, domestic food is never roasted or baked.

Three meals a day are generally eaten. *Tortillas* and beans

[9] As they do, for example, in Cholula. Bandelier, op. cit., 138.

are found at nearly every meal; often there is little or nothing else. Meat is most frequently added.

The commonest beverage is coffee, homegrown and toasted. Chocolate, the aboriginal drink, is everywhere known but its use is restricted by its cost. When made, it is beaten to a froth in the ancient manner. Milk is not rarely drunk, but usually sweetened with sugar or flavored with chocolate; it is almost never used as an ingredient in cookery. A variety of "teas" are made of native and also of introduced herbs and seeds. Commercial sugarcane alcohol is largely drunk by the men. The maguey does not flourish at this low altitude; therefore *pulque* (anciently *octli*) must be imported, and its use is confined largely to festal occasions.

The ancient male costume of the Aztecs, although modified according to the social position of the wearer, was composed of three principal garments: the *maxtlatl*, a belt or loin-cloth with the ends hanging down in front like an apron; the *tilmahtli*, a woven cape worn over the shoulders and knotted in front; and the *cactli*, sandals of leather or woven of maguey fiber. Of these three the first has entirely disappeared,[10] the second influenced the form and use of the modern *zarape*, while the third remains little changed today. For all articles of men's clothing worn today in Tepoztlan, Nahuatl terms are in use. The ancient term *tilmahtli* is applied to the *zarape*, and the sandals are still called *cactli* or *cuitlaxcactli* ("leather sandals"). The other terms are descriptive compositions, or are Spanish roots modified to suit Nahuatl linguistic patterns.

A man wears one or more shirts (S., *camisa*; N., *cotontli*) and over these, when the weather is colder or for better dress, a blouse (S., *blusa*; N., *panicotontli*). These, like the trousers, are made of cheap white cotton cloth bought in the local stores and are made up by the women. The blouse is buttonless; the lower ends tie together in front. For holiday attire the shirt may be pink or blue, or a colored vest (S., *chaleco*) may be added. Loose white trousers (S., *calzones*; N., *cahzon*) of the same material are

[10] It may possibly be worn by some in Tepoztlan, as it still is elsewhere in Mexico. Bandelier, op. cit., 121.

worn. These are wide at the waist; the sides are crossed in front and the trousers are held up by a cloth belt or sash (S., *faja* or *cenidor*; N., *teilpiloni*). A man often goes barefoot. The sandals are of the ancient pattern except that steer leather is used. A woman does not wear sandals except when travelling. The straw hat (S., *sombrero*; N., *cuatlayecahuiloll*), worn almost everywhere in Mexico, is of course of Spanish origin. A few styles are "correct" in Tepoztlan.

It remains to mention the *zarape*. Ramon Mena[11] derives the word from Nahuatl *tzalanpepechtli* (*tzalan*, interwoven, and *pepechtli*, thick blanket), a descriptive term applied by the Indians to the heavy blankets, often woven in with metal threads, carried by the conquerors and placed by them upon the ground when resting or sleeping. This blanket and the *tilmahtli* fused, culturally, and became the *zarape*. In Tepoztlan two forms are worn: the blanket form, wrapped around the shoulders and held together with one arm, and the poncho form,[12] in which the head passes through an opening in the center. The *zarape* is entirely masculine, but on unusually cold days a woman may borrow a *zarape* and wear it beneath her *rebozo*.

The *machete* (N., *tlateconi* or *tepoztlateconi*), the characteristic Mexican steel knife with the curved tip, is so generally carried that it may be mentioned as a part of the costume.

The woman's costume in Tepoztlan preserves fewer indigenous elements, although this is not the case in many other villages in southern Mexico. Before the Conquest it consisted of two principal garments: a loose blouse (*huipilli*), and a skirt (*cueitl*), consisting of a rectangular cloth wrapped around the lower part of the body. The *huipilli*, under that same name, is worn in many Indian communities south of Morelos, but not in Tepoztlan. In Tepoztlan the woman's costume is European in origin, and the names of the garments in Nahuatl discourse are Spanish, except those for the skirts, which are descriptive Nahuatl terms.

Over white cotton underdrawers (S., *pantelones*; N., *pante-*

[11] Ramon Mena, El Zarape. Anales del Museo Nacional de Arqeologia, Historia y Etnografia, epoca 5a, Tomo 1: 373 ff., 1925.

[12] This poncho is probably South American in origin.

lontin) is worn an underskirt (S., *enaguas adentro*; N., *cueiztacli*), usually also white, and over this a colored overskirt (S., *enaguas encima*; N., *cueipanitl*). The skirts are ankle length, very full, and gored. A collarless shirt (S., *camisa*; N., *camisahtin*), tucked into the skirt, covers the upper part of the body. Over it is worn a blouse (S., *saco*; N., *sacohtin*), and over this usually an apron. This either includes an upper piece covering the chest, when it is called (S.) *babero*, (N.) *baberohtin*, or does not, when it is called (S.) *delantal*, (N.) *delantaltin*. Around the waist is wound a sash (S., *cenidor;* N., *zinidor*), dark blue or gray, about eight inches wide and six to ten feet long. This is the only garment of those here enumerated which is woven in Tepoztlan. Almost invariably there are earrings, often of gold (S., *aretes;* N., *areteztin*), and a short string of beads, most commonly red seeds (N., *corales;* N., *coraleztin*). Except when walking long distances, when sandals may be worn, or when in city dress which includes shoes, the feet are bare. The only over-garment is the *rebozo* (N., *payo*),[13] a sort of shawl worn over the head and upper body; one end is drawn across the breast and thrown back over the left shoulder. This is the characteristically Mexican garment worn almost everywhere and by every class except the highest. The *rebozo*, like the *zarape*, is a post-Conquest development, but unlike the *zarape* it has no Indian progenitor. It probably represents a cheaper and more practical modification of the Spanish *mantilla* by the working Indian woman; and it had already taken its form by the end of the sixteenth century.[14]

Many women possess, for Sunday costume, a one-piece dress of finer material. This is nearly always white, with a flounced skirt, and ornamented with pink or blue ribbons.

No women ever wears a hat except when a man's hat is worn for work in the fields or travelling in the sun. When sitting in the sun a woman may wind the *rebozo* on her head like a turban, but the real turban headdress frequently found in southern Mexico is absent. The hair is worn in two braids, or, particularly

[13] I do not know the etymology of this word.

[14] José de J. Nuñez y Dominguez, El Rebozo. Mexico: Departamento Editorial de la Direccion General de las Bellas Artes, 1917.

by girls and young women, in a single braid. No cosmetics are used except that at the Carnival talcum powder may be put on the face.

Two generations ago the prevailing woman's costume in Tepoztlan was of another sort, a sort which included more aboriginal elements. This costume still survives in Tepoztlan, where two or three old women still wear it; there are probably others in the neighboring hamlets. It consisted of two principal garments: a skirt (N., *pitzcueitl*), of homespun, white above the hip and black below, where it was pleated, and a white triangle of similar homespun worn over the head like a poncho with one corner hanging down the back. This latter garment is the *quechquemitl*. It is a probably indigenous garment worn by Indian women in central and northern Mexico.

These two garments were made locally on primitive looms. Today all textiles are imported either as readymade garments or as cloth to make up into clothing, except some of the women's belts which are still made locally.

The children's clothing reproduces that of the adults.

The aboriginal transportation system and that introduced by the Spaniards exist side by side in Tepoztlan, as they do nearly everywhere in Mexico. Burros, mules, horses, and oxen, with accompanying paraphernalia—saddles, bridles, lassos, yokes—are used in patterns substantially those of sixteenth century Spain. Only the wheel is not used in Tepoztlan, because the steepness and rockiness of the roads make its use impossible.

Nevertheless a very large part of transport takes place on human backs with the aid of aboriginal devices. Burdens are supported with the aid of the forehead tumpline (S., *mecapal;* N., *mecapalli*)which is sometimes assisted by another line across the chest. Articles are carried either in the *chiquihuite*, which is then bound to the *mecapal* by means of the *ayate* (N., *ayatl*),[15] a tough, coarse-woven cloth of maguey fiber, or else in the *huacal* (N., *huacalli*), a crate of rough-hewn sticks. Water is carried in a hollow gourd (S., *bule;* N., *atecomatl*), supported by a lacing of

[15] On the use of the *ayate* among the Otomi, see Starr, op. cit., 8.

leather thongs. Women, as has already been said, carry purchases or small belongings in the *canasta*, or occasionally in a long rectangular fiber bag (S., *bolsa*). Men never carry these, but use for the machete or other possessions a small flat square bag of vegetable fiber, the *morral* (S.)

Of musical instruments, recognized by the Tepoztecans as such, all are European: guitar, flute, saxophone, cornet, etc. Ritual music is sharply distinguished and ordinarily not called music. Of instruments employed for this purpose the horizontal wooden double-slotted drum (*teponaztli*) is entirely pre-Columbian. One of the two *teponaztlis* remaining in Tepoztlan has every appearance of being an actual pre-Columbian artifact. The *huehuetl*, the vertical drum with the skin head, which in Mexico is a commoner survival than the *teponaztli*, does not occur in Tepoztlan. The small flageolet (S., *chirimia*) which together with a small drum of European pattern is played on the roof of the church or chapel to signalize every sacred fiesta, as were once played on the *teocalli* the *tlapitsali*, *huehuetl* and *teponaztli*, is carved out of *zopilote* wood and is a modification of the ancient pattern under Spanish influence. In Nahuatl discourse it bears the ancient name, *tlapitsali*.

Local industries are few and almost all are European in character. Adobe bricks are made by anyone who builds a new house or repairs an old one; the simple technique is probably chiefly aboriginal. The twisting of ropes of maguey fiber is a domestic industry confined to a limited group of houses. This technique is European; a wooden wheel is used. The lime-burning done at the neighboring hamlet of San Andres is likewise European. Carpentering, ironworking, masonry, woodcarving, silverwork, shoemaking, and breadmaking are all in the hands of specialists; in each case the tools and techniques are European—the early priests were good teachers and the Indians good pupils.

Mena[16] declares that *zarapes* are made in Tepoztlan of tree cotton. I was unable to find any trace of such an industry. A large loom has recently been introduced by an educated young

[16] Op. cit., 382.

man for the weaving of shawls. The use of tree cotton (N., *cuahichcatl*) is, however, well understood, and occasionally thread is spun thereof by the use of pre-Columbian spindlewhorls (S., *malacate;* N., *malacatl*) which abound in Tepoztlan and are simply picked up in any yard and used. Even in the few surviving primitive looms, however, commercial thread is used. There are at least two of these looms still in operation in Tepoztlan. They are used only to weave women's belts. The structure and somewhat detailed nomenclature of this loom cannot find room for discussion here. The weft is set up on a framework (N., *tzatzaztin*) of ten short sticks driven into the ground. The upper end of the loom is fastened to a house or tree; the lower end is drawn tight with the backstrap (N., *analoni*).[17]

Of industries relying on special machinery there are two: the mill, to which is brought for grinding only a small part of the maize eaten in Tepoztlan,[18] and the mixing and bottling of soft drinks of carbonated water and artificial flavoring. Several men are occupied with this enterprise, and the product is largely consumed.

This fusion of Indian with Spanish features produces, it will readily be seen, three classes of culture traits: unaltered Indian elements; elements which have developed in Mexico from the impinging of Spanish features upon a homologous Indian pattern; and European elements transported intact to Mexico. These three classes are respectively represented, for example, in costume by the sandals, the *zarape*, and the trousers, and in agricultural tools by the pointed stick, the *coa*,[19] and the plow. But while a separation of Indian from European elements is of interest to the culture-historian, it is of no interest to the native of Tepoztlan.

[17] Mena says, and probably rightly, that the entire loom is called *analoni*. But my particular informants used the term for the backstrap only.

[18] There are three reasons why the mill has only a limited use. To many the slight cost is prohibitive. Husbands assert that the flavor of *tortillas* made of mill-ground *nixtamal* is very inferior. And finally to bring her maize regularly to the mill to the neglect of her *metate* lowers a woman in her neighbors' eyes.

[19] The *coa* is the flat iron hoe with the blade set parallel with the handle. It preserves the curved edge and the function (it is used to heap up earth around the maize) of the aboriginal *huictli*, but it is now made of iron and has probably somewhat changed its shape.

The integration of certain European elements with Indian features is complete. Although few introduced elements bear completely Nahuatl names[20] (the *machete* is one exception), the Tepoztecan is unconscious of any difference between these and pre-Columbian elements. He feels the same with regard to his sandals, which are almost wholly Indian in origin, as he does with regard to his white trousers, which are wholly European. The *machete* is as Mexican as the *petate*.

There is, however, a grouping of culture traits which corresponds to the prevailing attitude of the Tepoztecans themselves. So far as surviving Indian elements and as certain European elements are concerned, the integration is complete. The culture just described, involving elements of both cultural heritages, is that which is general throughout Tepoztlan. But not all of the imported traits found in Tepoztlan have entered into this general culture. Some traits of material culture occur in Tepoztlan particularly in houses near the central plaza, which are not a part of the general culture. Though perfectly familiar, they are possessed only by individuals more used to modern city customs, and are regarded by the majority of the population as exterior to common life. Features such as these have not entered into the culture because too expensive (brick floors; iron grilles) or because their general acceptance would involve radical changes in existing techniques (the fork). There is, therefore, a classification which corresponds with subjective categories, between the integrated Tepoztecan culture on the one hand, and secondary, exterior elements on the other. These exterior elements are thought of as attributes of city life, that is, of modern industrial civilization. They are brought down to Tepoztlan by people used to city ways. When a Tepoztecan goes to the city, he to a certain extent temporarily assumes the material culture of the metropolis. He has, not infrequently, a separate costume for city wear: dark

[20] In speaking Nahuatl one uses the Spanish word modified to fit Nahuatl phonetics and morphology. Mariano Rojas, a native of Tepoztlan, in his Manual de la Lengua Nahuatl (Mexico, 1927), lists Nahuatl names for many articles of European origin, but most of these, while intelligible, are the artificial constructs of a linguist, and few are in general use.

trousers, a dark hat, and shoes, worn only on visits to the city. This simple fact expresses the nature of the community of Tepoztlan: no longer a primitive tribal society nor yet an urbanized community, it must nevertheless be defined, as it tends to define itself, with reference to the worldwide city culture within which it is now included.

The following table lists some features of the material culture in columns representing the categories suggested.

General Tepoztecan Culture		Secondary Elements	
Indian elements	*Mixed elements*	*Spanish elements*	
Men's clothing			
Sandals	*Zarape*	Undergarments; shirt; trousers; vest; blouse, straw hat	Dark trousers; shoes; felt hat
Women's clothing			
(*Quechquemitl; pitzcueitl*)		The *rebozo* and almost all other clothing	Shoes
The house			
General form and materials; *temazcal;* granaries; turkeys	Water-tank; bee-hives	Tiled roofs; hinged doors; chickens; pigs	Balconies; brick floors; iron grilles.
House furnishings			
Petate; otate bed; *tlequil;* olla; *metate; comal; molcajete; chiquihuite; tompiate*	*Cazuelas; jarros; bateas;* benches, stools	Table; candles; oil-cans; water-carrier; *machete;* sewing machine; Backed chair; brazier	Brass bed; phonograph; oil lamp; forks
Foods and stimulants			
Tortillas; moles; tamales; atoles;		Bananas and citrus fruits; sugar; spices;	Canned foods; beer

beans; maize; chile; squash; tomatoes, *pulque*	*Tortas*; tobacco	rice; lima beans; beef and pork; chickens and eggs; coffee; *aguardiente*	

Agriculture

Pointed stick	*Coa*	Plow	

Transport

Ayate; chiquihuite; mecapal; huacal: bule.	*Morrales.*	Horses; mules; burros; oxen.	

Musical instruments

Teponaztli	*Chirimia*	Guitar; cornet	Phonograph; violin

Industries

Weaving; adobe-making		Brick- and tile-making; ironworking; carpentering; shoemaking; breadmaking	Bottling drinks

UNIVERSITY OF CHICAGO,
CHICAGO, ILLINOIS

THE MORPHOLOGY AND FUNCTION OF MAGIC

A Comparative Study of Trobriand and Zande Ritual and Spells

By E. E. EVANS-PRITCHARD

Note. This paper contains preliminary results of an expedition to Central Africa, undertaken by the writer under the auspices of the Sudan government, in continuation of the work done by Professor and Mrs. Seligman in the years 1909–1910, 1911–1912, and 1921–1922. The work was assisted by grants from the Royal Society and the Laura Spelman Rockefeller fund. The communities studied were mainly those of the Azande in the Bahr-el-Ghazal province of the Anglo-Egyptian Sudan. The writer, a research student in the Department of Anthropology at the London School of Economics (University of London), remained among these natives for about 6 months in 1926–1927 and is now on a second expedition to the same district. This paper formed part of a thesis accepted for the degree of Ph.D. in the University of London.

The Use of the Comparative Method

A WORKING hypothesis should never be allowed to become a settled conviction until it has been tested and re-tested, but every first-hand investigation requires some theoretical view to start with. In the present attempt I shall have especially in view the entire range of magic in two societies.

Very little work has yet been accomplished by specialists in the field towards presenting a full descriptive and analytical account of magic. One cannot therefore make wide comparisons which would yield general principles based on an intensive study of many primitive communities. Moreover, the work which has been accomplished has been done mainly in Melanesia and the social incidence of magic in Melanesia appears to differ considerably from the social incidence of magic in Africa. This is due in general to the difference in form between the two types of society and in particular to the bias given by a strict association of magic with a definite social grouping which profoundly affects the structure and the functional occasions of the magic. I shall attempt to demonstrate in this paper that the principles of magic deduced from Melanesian data and formulated as general laws

for all societies have, in view of a study of African peoples, to be reformulated and possibly modified.

I shall show how this is so by a comparison between the magic of a Melanesian society described by Professor Malinowski and the magic of an African society investigated by myself. The Melanesian community is that of the Trobriand islands, a coral archipelago lying to the northeast of New Guinea. The African tribe is a section of the Azande nation which lives in the Bahr-el-Ghazal province of the Anglo-Egyptian Sudan. I shall build up my argument mainly on the data furnished by the Trobrianders and the Azande but shall draw upon any other societies of whose magic there is a good account to check my results.

In order to understand the argument it is necessary to know the sociological distribution and balance of these two societies and their main food-procuring activities. The Trobrianders live in villages which act together in communal undertakings such as agricultural labor, trading expeditions, warfare, and public ceremonial. The villages are also largely political units, though the chief may rule over the wider area of a district. Many of these chiefs are little more than village headmen, others have great prestige in virtue of belonging to certain "families" of the four totemic clans. None wield great executive power. The four totemic clans are scattered but the "families" or sub-clans are localized. The Trobrianders are patrilocal and matrilineal, the girl going to live in her husband's village, but membership of the clan group and inheritance of wealth and rank are passed to a man's sister's son instead of to his own natural offspring. Girls are married from their father's home whilst boys as a rule return to their mother's village before marriage. The main economic activity of the Trobriander is the cultivation of his gardens. Fishing plays a great part in maintaining his food supply and is of far greater importance than hunting owing to the absence of mammalian fauna in these coral islands.[1]

The social organization of the Azande is as different from that of the Trobrianders as are the islands of the South Seas

[1] Seligman, The Melanesians of New Guinea, chap. 49, 1910. Malinowski, Argonauts of the Western Pacific, passim, 1922.

from the vast inland tracts of Central Africa. The Azande have no village life but live in homesteads widely separated from each other. In consequence they have fewer communal undertakings. Politically they are organized into tribes which stretch over an enormous area and are governed by one chief. The tribes are divided into a number of ill-defined sections each under the leadership of a chief's deputy. The chiefs all belong to one ruling class and exercise great power. There are a large number of totemic clans which are scattered all over the country and possess little social solidarity. The Azande are patrilocal and patrilineal. Girls live in the homesteads of their husbands and inheritance of wealth and rank pass from a man to his sons and brothers. Gardening forms the main work of a Zande. Hunting and the collection of edible termites are important activities, fishing contributing little to the food supply.

If we study any such institution as magic, religion, law, or economic life, we shall find that it takes on the mould of the society in which it has its place and function. Where the morphology of society differs as between the Trobrianders and the Azande we shall expect to find that the sociological rôle of magic amongst these two peoples differs accordingly.

Function of Magic

Professor Malinowski was the first writer to demonstrate clearly from a detailed study of one society wherein lies the function of magic.[2] He showed how magic filled a gap left by lack of knowledge in man's pragmatic pursuits, e.g., wind magic, and how it provided an alternative means of expression for thwarted human desires, e.g., black magic. His general conclusions as to the function of magic in society are fully borne out by a study of Zande data.

For example, the Zande uses magic to protect himself, his children, his agricultural and hunting activities from the malign

[2] Magic, Science and Religion, published in Science, Religion and Reality (ed. J. Needham), 1925. References will be to this paper when not stated otherwise. For the detailed facts on which Prof. Malinowski bases his views see Argonauts of the Western Pacific, chapters on Magic; Myth (Psyche Miniatures), 1926; Crime and Custom, 1926; and Sexual Life of Savages, 1929.

power of witchcraft. He uses productive magic to multiply his crops, to ensure success in netting game, in encouraging the termites to embark on their nuptial swarmings, in smelting and forging iron, in increasing the number of his subjects. He uses magic to give him confidence in love-making or in singing, to protect his property from theft and his wife from illicit intercourse. He consults the magic of the oracles to give him confidence before circumcision, before marriage, before building a new homestead. Magic plays its part in all the main biological and social occasions of a Zande's life. I could multiply examples, and an analysis of the social context of each would endorse Professor Malinowski's conclusions as to the psychological and sociological rôle of magic.

But suppose that a Trobriand Argonaut were to make an unusually long and perilous voyage, were to paddle his dug-out canoe two thousand miles up the placid and dreary waters of the Nile, were to make his way to Zandeland, were to learn the tongue of the Azande and enter into their customs, how would he find that their magic conforms to or differs from the principles of his own society?

He would find that Zande "white" magic, whether protective or productive in character, like his own is never looked upon as one of the forces of nature which can be utilized by man, but is regarded as a cherished cultural possession which derives its powers from man's abstinence and from his knowledge of tradition. He would find that the Azande, like his own people, believe magic to have come into the world with man and not to have been acquired by subsequent discovery in the world of nature. The Zande would reject as strongly as himself the idea of magic as a universal impersonal power as expressed in the concepts *mana* in Polynesia and *wakan* and *orenda* in North America.[3] Also neither the Trobriander nor the Zande consider magic to be a gift from the spirits of the dead.

---

[3] I do not wish to state that these forces are conceived of as impersonal by the natives themselves, but that they have been described as such by ethnographers and theoretical writers, such as Marett, Preuss, Hubert and Mauss, Durkheim, and others.

The sex and food taboos which precede all acts of magic would conform to the tradition of the Trobriand visitor. Nor would he find anything in the rites of magic which would appear to him to be inconceivable or unreal. But where the Trobriander would be confused would be in noticing that whilst in structure Zande magic is similar to his own, it stresses some of its component parts which he regards as of less importance than others, whereas some of the parts upon which he lays the greatest stress in his island home are performed by the Zande with a shocking freedom and carelessness. In both societies all important acts of magic consist of the rite, the spell, the condition of the performer, and the tradition of the magic, but the emphasis placed on each by the two peoples is different.

The Spell

To peoples such as the Trobrianders and the Maori the spell is a rigid unalterable formula which is transmitted intact from generation to generation, and the slightest deviation from its traditional form would invalidate the magic.[4] The spell is "occult, handed over in magical filiation, known only to the practitioner." Knowledge of the magic is knowledge of the spell, the ritual centers round it, it is always the core of the magical performance (Malinowski, 68). Now to the Zande the spell is nearly always essential to the act of magic in all forms of "white" magic, but it is not stressed in the same way as in the Trobriand islands or in New Zealand. Indeed, the qualities of the spell in Zande magic are the direct opposite of those which we have been told characterize Trobriand magic. It is a saying rather than a formula, it is familiar, it is handed over without strict reference to genealogical ties, the knowledge of it is not confined to the practitioner.

I will give an example of owned Zande magic from my collection of texts. It is a typical hunting spell, which is pronounced over a pot in which the magical ingredients are being cooked in oil. The practitioner stirs the pot and says:—

[4] For Maori magic, see R. W. Firth's Primitive Economics of the New Zealand Maori (London: Routledge), 1929.

bingia	nga	mu	mi	ye	ka
(name of magic)	are	you	I	come	to

ra	ru	ware	mu	ti	na
cook	you	thus	you	fall	with

ana	fo	ri	mi	imi	mbaga
animals	for	me	I	kill	bushbuck

ana	dunduko	mi	ara	ru	ti
animals	all	I	cook	you	for

ana	mi	imi	ana	gbe
animals	I	kill	animals	much

"You are *bingia* magic, I come to cook you thus. You bring me animals. I kill bushbuck—all animals. I cook you on my behalf. I kill animals much."

This spell is not a set formula learnt by heart and repeated without variation by all who use the same magic, nor one which is handed down intact from generation to generation. It is a saying adapted to the purpose of the magic and uttered in the common form and phraseology of all Zande spells but it will vary in its word formation. The practitioner will change words on different occasions and different men will insert different details.

To make this variation in the spells quite clear I will give one more example, which embodies two texts given to me by the same informant on different occasions. There is an oil-bearing plant, a species of sesame, called *kpagu*, which yields a regular yearly crop to the Azande. The material used in this magic is a tall grass with a feather-like form of its branching stems, called *bingba*, and is known to everyone. It is a common grass which springs up on arable land and is used for thatching the roofs of the huts. Now a man who wishes to increase the yield of his *kpagu* will pluck some of these grass stems and hurling them like a dart will transfix the broad leaves of the oil-plant. The spell accompanying this action was given me in the first instance as follows:

kpagu	nga	mu	du	le	mu
(name of plant)	are	you	is	here	you

zunga	a zu	wa	kina	bingba
be	very fruitful	as	truly	(name of grass)

ni	dunga	he
with	many	it

"You are *kpagu* here, you be exceeding fruitful, indeed as *bingba*, with much fruit."

On a second occasion my informant gave me the spell for the same magic as follows:

bingba	nga	mu	sele
(name of grass)	are	you	oil

ida	ida	wa	kina	bingba
consent	very much	as	truly	(name of grass)

gi	kpagu	mu	zungu	gbe	ka	
my	(name of plant)		you be	fruitful	much	not

mo	kanga	ya
you	refuse	not

"*Bingba* are you, oil plant take very well, just like *bingba*. My *kpagu* be exceeding fruitful, do not refuse."

It will at once be seen by a comparison between these two spells that there is more difference than similarity in the wording. The sense is the same but we find that the words are so little part of a formula that in the first spell the plant is addressed, whereas in the second spell both the plant and its magic are called upon by name.

It is true that the example I have given is of an unowned type of magic and a type of magic which has no part in communal undertakings. As will be seen later, it is consequent upon my argument that the more strictly owned is magic and the more the occasion on which it is practised is of common interest, the more it will tend to become formulated, the less it will vary from traditional form. But I will return to a consideration of this point later.

Here it is possible to make a useful distinction between the "saying" spell and the "formula" spell. The psychological back-

ground of all magic demands that utterance shall accompany the rite if its function is to be performed but it does not determine the form of the utterance. The form of the spell is dependent upon social causes not to be found in a study of the magic itself save in relation to the whole society and culture in which it is practised.

The Material Element in Magic

But if the spell in Trobriand culture is the essential part of magic, what takes its place in Zande culture? In the morphology of Zande magic it is the material element in the magic which is occult and which is known only to the practitioner. Usually this consists of strange woods and rare roots. Indeed the Zande word for magic is *ngwa*, which generally means wood and only in special contexts refers to magic. There is an interesting linguistic comparison in the Trobriand islands, for there, on the contrary, the native uses the same word for spell and magic, generally *megwa*, the material element in the ritual being of minor importance.

That it is to the material component in the ritual and not to the spell that the Azande attach main importance can be shown from many of my field-work experiences, but it is more satisfactory to illustrate their opinion from their own stories. Many of these stories, about the Zande culture-hero Ture, centre around magical powers once possessed but now lost. In one of these stories a man, called Yangayma, possessed magical feathers which enabled him to fly after performing a ritual dance and chanting a song-spell:

yu	yangayma	gi	swe	ku	ba
(untranslatable)	(name of man)	these	feathers	of	father

ba	fu	yangayma
father	gave	(name of man)

"Yu Yangayma, these feathers of father, father gave Yangayama."

The culture-hero Ture stole these feathers and chanted the song-spell, substituting his name for that of their rightful owner: "Yu yu Ture, these feathers of father, father gave Ture." In stealing the feathers, however, Ture dropped one of them and when Yangayma found this he put it in his hat and singing the

spell as above he gave pursuit into the air and deprived Ture of all the stolen feathers so that the culture-hero fell to the ground and was killed.[5]

In another story Ture was walking with a man called Depago who possessed magic which enabled him to enter into the ground. When it began to rain he took some medicine from his horn where he kept it and wiped it on an ant-hill. On the ant-hill opening they both entered and Ture was amazed to see the fine village and the wealth of Depago under the ground. In order to leave the ant-hill Depago wiped some more of his magic on to the earth and said:

Depago	Depago	Depago		nzinginzingi		sende
(name of man)				muddy		earth
Depago		na	yera		ngalimo	
(name of man)		is	cutting		deep	
sende	nzinginzingi		sende			
earth	muddy		earth			

"Depago, Depago, Depago, quagmire, Depago is cutting a big pit, a quagmire."

As Ture was departing he stole some of the magical soot. He went home and persuaded all his wives, with the exception of his first wife Nanzagbe who knew his ways, to burn their huts and come and live with him under the ground. He went with his wives to an ant-hill and wiped some of the magic on the ground and said "Deture, Deture, Deture, a quagmire, Deture is cutting a big pit, a quagmire." The ant-hill opened and they entered only to find grass and they became very hungry. Meanwhile Nanzagbe went and told Depago what had happened and he came and rescued Ture and his wives.[6]

This story is in need of native commentary as it is not clear why Ture could not have got out of the ant-hill. Those natives whom I have questioned on this point have replied that he could not get out because he had not enough magical soot since he had foolishly wiped it all on the outside of the ant-hill.

---

[5] See Plas and Lagae, Zande Grammar, 1921.

[6] See Rev. C. Gore's forthcoming Zande Grammar.

In yet another story Ture tries to copy someone whom he has seen putting out a bush fire by placing a magical fat on his head. But in this story we are distinctly told that Ture used a different fat so that his efforts ended in failure.

I could give other instances from the folk-lore of the Zande to illustrate the manner in which the importance of the magical substance itself is stressed more than other aspects of the performance, but these three will suffice. We have seen that in the first story it was the theft of the feathers which enabled Ture to fly and that it was the loss of these feathers which caused his subsequent fall, just as it was the finding of the one dropped feather which gave Yangayma power to pursue him from the earth. In the second story it was the theft of the magical soot by which Ture entered the ant-hill and its absence which prevented him from getting out again. In the third story it was the use of a secret fat which gave power over fire and it was Ture's attempt to control fire by a different fat which led to failure.

On these occasions Ture copied the spell correctly—I do not wish to underestimate its importance in the magical performance—but it was the loss of the material of the rite which made the act of magic invalid. This is the whole point of the stories.

Now just as we found that the emphasis placed on different elements of the magic in the Trobriand islands and in Zandeland has a parallel in different linguistic symbols, *ngwa* and *megwa*, we shall find a similar parallel between the significance of the stories given above and the significance of some Trobriand myths.

Once upon a time in these South Sea islands there lived a man Mokatuboda of the Lukuba clan with his three sisters and his younger brother Toweyre'i. Mokatuboda possessed the magic of the flying canoes and the myth describes his success in a trading expedition and the envy of the other natives whose canoes had to sail on the water whilst his flew through the air. Next year they cultivated their gardens. There was a terrible drought and the rain fell only on the garden of Mokatuboda because he made an evil magic of the rain. Angry and jealous, his brothers and maternal nephews killed him, believing that they had been taught the magic (i.e., the spells) and could use it on his decease. But

Mokatuboda had not taught them the real spells, neither the magic of the adze nor of the rain nor of the lashing creeper nor of the coconut oil nor of the staff. His younger brother Toweyre'i thought that he had already received all the magic but he had only part, and next year when they prepared to make a big trading expedition he discovered that by his fratricide he had deprived mankind of one of its most powerful cultural possessions, the magic of the flying canoe. The whole point of this story is that the magic was invalid because Mokatuboda had not taught all the spells to his brother.[7]

I shall leave the spell, to return to it later, and will draw attention to another profound difference between Trobriand and Zande magic.

Tradition

In the Trobriand islands "in the case of any important magic we invariably find the story accounting for its existence." "All important magic has its tradition and is buttressed by its myth." Do we find the same background of belief amongst the Azande?

Since all magic tends to create its own myth it would be indeed surprising if there were no tradition of a simple kind associated with Zande magic. I found that there is always a current tradition, a cycle of everyday myth encircling and generated by the magic.[8] When I asked a Zande how he knew that his magic was of any use he told me a story from his own experience or from that of his friends or neighbors. He told me how when gathering termites by night his friend had blown his magic elephant whistle and how soon afterwards they heard the tramping and trumpeting of the elephants and next morning saw their deep spoor in the moist earth. Another told me how he had always wished to be a fine singer but had never shown any ability in the art until a famous song leader gave him medicine to eat. Another told me how his brother, and a neighboring chief also, had a swollen penis and had become impotent because of the use of a certain type of "black" magic. Always there is this halo of rumor and wonder around magic of the Azande.

[7] Argonauts of the Western Pacific, 311 ff.

[8] See also Malinowski, ibid., 76–77.

We know well, for Goldenweiser[9] has shown us, how in our own society magic is always associated with wonder-working, with strange coincidences too numerous to be accounted for by chance, with the rumor of uncanny personal experience, with the borrowed plumes of eastern mysticism. "There is no faith without miracles."

But this current tradition, this everyday myth is loose and short-lived whether in Melanesia, Africa, or Europe, and can be easily distinguished from the set legend and socially inherited myth by its loose form, its restricted range, and its absence of longevity.

I did not find, save in rare instances, myth of this kind associated with Zande magic. Often magic has been taken over by the Azande from some stranger people, and they will tell you how they learnt it by making blood-brotherhood with the foreigner. If you press the native to tell you how man first became acquainted with any magic he will say that Mböli, the Supreme Being, gave it to him. Thus though the myth of Mböli forms the final background of belief for all ritual, there is no specific myth for each specific type of magic.

Occasionally, however, I have found amongst the Azande a specific myth accounting for the origin of a magic, or a legend, proving its potency. Thus the clan of the Amazungu have a myth telling how they obtained their magic for healing fractures. Into the clan was born a baby quite round like a pot. The bewildered father was instructed in a dream by Mböli to incinerate the child and to use the cinders to heal broken bones. I will give another example. The corporation of medicine-men possess powerful magic known only to the members of the corporation. That their magic is genuine is proved by legends which show how in the past great medicine-men performed remarkable feats through its medium. In the Golden Age of their magic the magician Rëpa, a primitive Moses, went with his chief to wage war beyond the great Uelle river of the Congo. On their return northwards the army found themselves with the enemy in their rear and the wide river to their front. In this crisis Rëpa threw some

[9] Goldenweiser, Early Civilization, 193 ff., 1921.

of his magic into the water so that the waters parted, leaving a dry channel of sand, on which they passed over to the other side. When the enemy pursued them into the centre of the river Rëpa, like his Hebrew prototype, closed the waters upon their fighting men.

Like Moses in the last story, his end was like the end of Elijah.

> Rëpa dances exceedingly the dance of the medicine-men. He rose on-high. Then the bells say *wia wia wia wia*. He rose and rose and rose for ever on high. He went quite out of sight so that the eyes of men did not see him again. He dropped the bells from his hands. The bells kept on falling and falling and falling: they fell here to earth. They plunged and plunged to the earth right into the centre of an ant-hill so that no one saw them.

Many were the mighty deeds performed by Rëpa and his son Bokoparanga in virtue of their magic.

The myth of the Amazunga clan and the legends of the medicine-men are, however, quite exceptional. Generally I have failed to find any story accounting for the existence of magic. Just as it was possible to make a useful distinction between the saying and the formula in the rite of magic, so it is possible to make a similar analysis of the tradition of magic. The psychological function of magic demands a background of belief in its tradition, but it does not determine the form of these traditions. Whether they exist only as loose current tradition and short-lived every-day myths or whether they become set into the mould of a compact myth or legend, depends upon the place they occupy in each society, and upon their relation to other parts of the culture in which they exist.

I shall shortly return to a consideration of tradition and the place which this conclusion occupies in my argument. Absence of formulae and absence of specific myths are the two main characteristics which in Zandeland present a contrast with the magic of the Trobriand isles. There are smaller differences which will be noted in the following section.

The Rite, the Conditions of the Rite, the Conditions of the Performer

Were I to describe fully the ritual of several types of Zande magic, the reader would notice a laxity in the performance which

would horrify a Melanesian. He would find confusing variations in the sequence and in the procedure of the ritual. The slightest slip in the ceremonial, a minute omission in the performance of the rite, an insignificant change in its sequence, does not, as amongst many primitive peoples, the Trobrianders and the Maori for instance, invalidate the whole act of magic.

Nothing acts more strongly in conserving tradition and compelling conformity in ritual than the publicity of the performance. Amongst the Trobrianders some rites of magic

> are ceremonial and have to be attended by the whole community, all are public in that it is known when they are going to happen and anyone can attend them (p. 31).

Amongst the Azande there is very little ceremonial in magic. There are certainly no big public ceremonies which must or may be attended by others than the family of the man concerned or his friends or by a few old men. Privacy is characteristic of Zande magic.

Lack of conservative discipline in the performance of the rites has its counterpart in the lack of uniformity in the time during which a man must observe the sex and food taboos which accompany all magic. Though agreeing in the main, different practitioners will give one different time estimates and some will observe a wider range of food restrictions than others. There is also considerable laxity in the observation of the taboos. These are often neglected, though a practitioner would always say that they had been observed as they are supposed to be.

In Zande magic the taboos and the rites are subject to variation, the spell is diffuse and unformulated, the tradition is not standardized, the performance is neither public nor ceremonial; the whole act of magic is less rigidly defined and less amenable to set form than the magic acts of Melanesia.

Group Ownership of Magic

What then are the social causes which determine these differences between the ritual of the Trobriand islands and the ritual of the Azande of the Nile-Uelle divide? I think that they are to

be found in a comparative study of the ownership of magic in the two areas. In the Trobriands

> Magic tends in all its manifestations to become specialized, exclusive and departmental, and hereditary within a family or clan (p. 45).

Amongst the Azande magic is seldom specialized within or exclusive to a family or clan, but is spread widely amongst the community without reference to kindred ties.

If you ask a Zande whence he obtained his magic he will tell you that he received it from his father for it is handed from father to son like any other wealth; or he will tell you that he or his father bought the magic, for magic, being the property of an individual, can be bought and sold; or he will tell you that one of his friends told him about the magic out of comradeship, or that knowledge of that type of magic is possessed by everybody.

Trobriand magic presents a contrast in that in its most important systems, such as garden magic, fishing magic, the ritual of weather, rain, and sun, it must be transmitted through the binding custom of kinship which compels a man to hand over his knowledge of spells with his other property to the son of his sister. It is true that some magic can be bought, but its transference is always accompanied and restricted by social qualifications. Very little magic is unowned.

In this difference between Trobriand magic owned by the family or clan, not open to sale and purchase outside these groups, and Zande magic, owned by the individual and able to be transmitted beyond the restricted domain of genealogical or clan relationship, it is possible to see a solution to the problem of formulae and standardized tradition.

The formula is surety of undisputed ownership of magic and compels filiation of the magic in the family or clan, for the long set formula is a value which can only be handed over laboriously and slowly. But amongst the Azande magic is not generally associated with any social group, being diffused widely without reference to ties of relationship. Consequently there is no need for the formula which tends to restrict the use of the magic to the group already possessing it. Moreover, the core of the magic being not the spell but the material element, it is easily transferred

from one person to another. To the Trobriander the spell is the most important part of the magic, in a sense is the magic, because the formula keeps the magic in the group with which it is traditionally associated, whereas the Azande have no magical formulae, but only sayings, because magic is not generally associated with any social grouping. The formula is correlated with group ownership.

I attribute the emphasis placed upon tradition to the same social cause. The function of the myth is to project the facts of group ownership into the realms of belief, to provide a convincing sanction to the ownership. This is the rôle which it plays in the Trobriand islands, but as Zande magic is not associated exclusively with any section of the community there is no need for the myth as it would have no social function to fulfil.

If this explanation is correct, then in those exceptional cases in which Zande magic is associated with a social grouping it should also be associated with myth. This is what we do find, and I have already given examples from the clan of the Amazungu and the corporation of the medicine-men. Inversely the Trobriand "white" magic, which is not owned by any segment of society, should be found without a background of myth and is so found.

The conclusion drawn is that an utterance is an essential psychological accompaniment of all magical rites and that tradition is an essential sanction for their performance, but that these only crystallize into the set formula and standardized myth when the social mobility of the magic is restricted by its ownership being invested in the family or clan or some departmental grouping. Ownership is always a conservative and standardizing agent in society.

This thesis can be illustrated more widely than by the two areas from which my data have mainly been drawn, but I do not wish to make a compilation, for not only magical but all exceptional privileges invested in one class in society require the halo of myth. Thus amongst the Azande only those clans which are differentiated from the rest of the Zande totemic clans by a special social function have specific clan mythology. In some societies all the clans have differentiated social functions with

associated myths, as, for example, the Winnebago Indians.[10]

It will be found also that all important magic in any society is restricted in use to a few members of the community whether these few persons derive their credentials from membership of a family, kinship, or departmental grouping or not. By important magic I refer to all magic associated with those pursuits on which the life of the community depends; magic used in communal undertakings such as agriculture, fishing, hunting, trading expeditions; magic practised on behalf of the whole community such as the magic of rain and of the sun, magic to increase the totem animal or plant; magic used to reinforce some essential function of society such as government and leadership in war.

In the Trobriand islands all really important magic performances are carried out by men who have received their knowledge of the spells from their mother's brother according to the law of this matrilineal society. If a man passes on the spells to his own son, this latter may use them but may not teach them to another. Important magic is consequently restricted to a very few men who practise in virtue of membership of family or clan. To take another example, amongst the Kiwai Papuans,[11] a society in which group ownership of magic appears to be unknown and where knowledge of the rites and spells is common property, important communal activities such as house-building agricultural and fishing pursuits, and other collective acts of labor have their magic performed by one old man and one old woman who know the secret parts of the rites and whose death is a certain result of the performance.

Amongst the Azande there are only occasional communal activities in contrast to the Trobriand islanders or the Kiwai Papuans, but the stronger and more important medicines are known only to a few men.

Possible Results of Spread of Magic

If all the more important magic is in the hands of a few individuals in any society, the logical inference to be drawn is that

[10] Radin, The Winnebago Tribe. 37th Annual Report of the Bureau of American Ethnology, 1915–16.

[11] G. Landtman, Kiwai Papuans, passim, 1927.

the wider spread the magic the less important the social function it fulfils; the more the performance of magic becomes public property, the less social utility it possesses. This inference can be checked from observation.

Amongst the Trobrianders such magic as is known to all members of the community has very little social significance. The same is true of the Azande, amongst whom much magic is common property and much can be bought so cheaply that it is not even sought after by most men.

In a society such as this, where magic is not restricted in use to members of a group, but is characterized by its social nobility, it is possible to suggest tentatively that certain features in the domain of magic are due to the absence of exclusive ownership. I think that it is possible that the great extension of the magic of oracles, divination, and ordeal amongst the Azande and in many other parts of Africa in contrast to the little importance attached to them throughout Polynesia and Melanesia, may be attributed to the absence of hereditary ownership, set formulae, and standardized tradition. For it must be remembered that, although the object of oracles is to know about future events and not to produce or influence them, nevertheless it fulfils the same psychological function as other types of magic by giving man confidence in his social and economic undertakings. We have, therefore, various types of magic fulfilling the same function. However, in the present state of my researches into Zande customs I do not wish to stress this point too much.

This same phenomenon, this reduplication of rôle in many types of Zande magic, is seen in the special associations for the practice of magic (secret societies). Insofar as I have investigated these associations I have found that the purpose of their magic is already covered by other types of magic. The spread and popularity of these societies may, I believe, be accounted for by the need to systematize and stabilize magic by affiliating its use to an association and by this means enhancing its social utility. In these societies the knowledge of the magic is restricted to the leader of the society. However, the secret societies at present found in Zandeland are of recent introduction. Generally they

are of easy access, short-lived, and replaced by other associations of a like nature.

Creation of New Magic

Not only have all the secret societies of the Azande of the Bahr-el-Ghazal entered from across the Congo border, but many hunting and other medicines are learnt from the Baka, Mundu, Avokaiya, and Moro peoples to the East, the Pambia to the West, the Bongo and Bellanda to the North, the Mangbettu, Amade, Abarambo to the South. Medicines have also been incorporated into Zande culture from the many peoples who now call themselves Azande, but who a generation ago spoke their own language and had their own distinctive customs. The territorial spread of magic is quick and far-reaching. In at least one instance the Azande have borrowed magic from even the distant and hostile Dinka tribes. The Azande find in the magic of their neighbors a constant source of new and powerful medicine.

Nor do I think that all Zande magic is of great age. We have already noted that all Zande magic has its current tradition, its halo of rumor, mystery, and wonder, the birthplace in all societies from which springs transmitted tradition, set legend, and standardized myth, stabilized by group ownership and handed over by the customary procedure of kinship, or other social machinery. However, in saying that magic creates its own mythology the problem has been simplified. Does not belief create magic? Often a native will tell you, for example, that a certain man has powerful magic to kill leopards. If you ask your informant what magic is possessed by the hunter, he will say that he does not know, but that he must own some magic or he would not be so successful in killing leopards.

Actual achievement is demanded of the man who wishes to sell his magic. The fate of unsuccessful magicians, especially rainmakers in many parts of the world, is evidence of this demand. But the production of rain is a supposed and not an actual achievement. Amongst the Moro of the Yei river in the Southern Sudan it is only when a man becomes renowned as a hunter that he

plants medicine roots at the side of his hut and becomes a practitioner.[12]

It would be a barren discussion whether the myth follows the practice of the magic in all cases or whether sometimes the practice of the magic springs out of current tradition. The rite of magic and the myth always interlace and shape each other. I only wish to suggest that new magic is constantly being created, and that it is created by successful men influenced by the rumors of magic which attend their success, and that whilst magic gives men confidence in their undertakings, it also represents a record of man's actual achievement. Primitive man is not a romantic but a practical hard-headed being, even in his magic, and there is no magic to attempt the impossible.

Functional Occasions of Magic

So far I have endeavored to show by correlations how the morphology of magic amongst the Trobrianders and the Azande is determined by the social structure of the two societies. The same is true of the functional occasions of magic. This cannot be demonstrated at length, as it would then be necessary to describe fully the occasions of use and the specific function of all magic in both communities. Moreover the statement is so obvious in simpler instances that it hardly requires demonstration. The Zande has no canoe magic because he has no canoes. The Trobriander has no magic of iron-forging because he lives in a stone age.

The problem becomes more complicated when we consider the sociological aspects of magic. It is clear that the communal garden magic of the Trobrianders is absent from Zande life because the Azande do not cultivate their gardens by joint labor.

It is more difficult to see why the Trobriand chief uses magic as part of his machinery of government, whereas the Zande chief does not use this weapon of chastisement, but this difference can readily be understood when the position of the chief is known in both societies. The Trobriand chief was unable to exercise great executive power as may readily be judged from the almost entire absence of corporal punishment, whereas the mutilations and exe-

[12] From my unpublished notes.

cutions inflicted on their subjects by the Zande chiefs are one of the many signs of their real power. The Zande chief, therefore, had little need of magic to enforce his rule.

On the other hand, the Azande move their homesteads freely over the countryside and a chief who has angered his people may lose his subjects. Also a young chief anxious to conquer or acquire new territory by peaceful means has to rely entirely upon his popularity to attract followers. Hence we find a system of magic for attracting dependents.

Magic used in communal undertakings such as we find in the Trobriands, in garden work, in trading expeditions, in building canoes, and in other forms of economic enterprise has no counterpart in Zande life. This is because there is a lack of cohesion in Zande social life, solidarity either due to close aggregation of dwellings or good means of communication, being absent. Thus while magic amongst the Kiwai Papuans or the Trobrianders is often associated with village activities, this cannot be so amongst the Azande because there are no villages.

Also amongst the Azande we do not find the institution of magic associated, save in one instance, with the clan. This is because the clans have little solidarity. Political functions are in the hands of a class and the clans also lack the cohesion which localization would give them. For magic is an important social institution, and for it to be orientated after a group, that group must have solidarity without which it cannot exercise important social functions.

Summary and Conclusions

I set out at the commencement of this paper to show that the social incidence of magic in Melanesia differs from the social incidence of magic in Africa and that this difference affects the structure and functional occasions of the magic. I have attempted to do this by a comparison between the data of the Trobriand islands and the data of the Azande of the Nile-Uelle divide. I explained how the Trobriander and the Zande regarded magic not as a force of nature, but as a cultural heritage, not as something discovered but as something co-existent in time with man, not as a vague impersonal power but as a tangible weapon of culture,

not activated by the spirits of the dead but deriving its power from the knowledge of tradition and the abstinence of living men.

I then analyzed the structure of magic in these two societies and showed how the spell amongst the Trobrianders is a standardized formula whilst amongst the Azande it is only a saying adapted to the purpose of the magic and accompanying the rite. I concluded that the psychological purpose of magic is not served unless an utterance is made in conjunction with the rite, but that the crystallization of the utterance into a standardized formula is determined by the affiliation of the magic with a group through the institution of ownership.

The analysis of magic in the two societies showed also that amongst the Trobrianders myth, like the spell, is a standardized formula, a set story transmitted intact to the succeeding generation by the social mechanism of kinship, whilst among the Azande magic generates only a loose current myth and everyday tradition, save in exceptional instances in which the magic is owned by a restricted social grouping and a stereotyped and permanent element of culture takes the place of the ephemeral mythology. For here again I concluded that the psychological purpose of magic is not served unless the ritual has a background of belief in mythology, a halo of stories about its wonder-working powers, but that the crystallization of these stories into standardized myth is determined by the affiliation of the magic with a group through the institution of ownership.

I suggested that any section of society enjoying special privileges, whether magical or otherwise, produces its own mythology, the function of the myth being to give sanction to the possession of the exclusive privileges.

I suggested that important magic, that is, magic which plays its rôle in large communal undertakings or is practised on behalf of the whole community or reinforces an essential function of society such as war or government, is always to be found in the hands of a few men. I gave some examples to support this view. Since all important magic is in the hands of a few individuals the more it becomes spread among the members of the community at large, the more it loses its importance and social utility. This gives

rise to the creation of new magic, magical redundancy, and an attempt to stabilize the magic through new groups or associations.

I have described how today magic is taken over by one people from another. This is one way in which new magic comes into being, but it is also created by individuals and I have discussed the manner of its birth.

In the earlier part of my paper I attempted to show that the form of magic depends upon the structure of society as a whole, and at the end I indicated that the functional occasions of magic are also determined by the social structure. Examples were given to show how the occasion on which magic is used, the social activities with which it is correlated, and the groups after which it is orientated differ with differences of social structure.

It is one of the aims of social anthropology to interpret all differences in the form of a typical social institution by reference to difference in social structure. In this paper I have attempted to show that differences in the form of the institution of magic, in particular between two societies, can be explained by showing the variation in social structure between these societies.

By the method of correlation we attempted to show that the formalization of the components of magic rites depends on the factor of ownership. It may be asked why magic is owned by the kin or clan groups in the Trobriand isles and not amongst the Azande. The answer is that in the Trobriands these groups have important social and economic functions to carry out which we do not find associated with the same groups amongst the Azande. Now since the rôle of magic is to enable these social and economic processes to be carried out, it is naturally associated with the groups fulfilling these functions. The purpose of this paper was to show how such an association affects the form of the magic.

London School of Economics,
University of London

RITUAL PARALLELS IN PUEBLO AND PLAINS CULTURES, WITH A SPECIAL REFERENCE TO THE PAWNEE[1]

By ELSIE CLEWS PARSONS

NOW and again the Pueblo student may have asked himself whether certain Pueblo traits do not carry a suggestion of Plains culture. The fetich bundles of the western pueblos, the behavior of the Clown societies, the tribal societies of the Hopi, the chiefly police system of the Tanoans, the directional corn-named groups of Isleta, the scalp dance of Zuñi, the summer camp of Taos, herein are to be found various aspects of Plains life. Yet the ritual emphasis, the ceremonial complexes, the social values at large, of the Pueblos vary so much from those of the Plains tribes that suggestions of parallelism must have been lightly dismissed, at least so I presume, as they have rarely found a way into print. Now I propose to take these parallels more seriously, so that we may at least have them clearly in mind in the reconstruction of tribal histories.

Ritual objects.—The term fetich-bundle applies to the *tiponi* of the Hopi, the *mi'le* of Zuñi, the *iyetiko* (*iariko*[2]) of the Keres. All these consist of a hollowed ear of corn filled with various seeds and girt with feathers, cotton, beads, and arrowpoints. It is the Mother and is the most sacred of altar properties. Its possession is a warrant for chieftaincy among the Hopi where it descends in the maternal family in charge of the ceremony. At Zuñi, curiously enough, the corresponding ceremonial groups, the rain priesthoods, where office also descends in the maternal family, have no corn fetiches, only the curing societies are possessed of them. The Zuñi curing societies show Keresan influence, and wherever the Keresan medicine society has spread, as at Isleta and among the Tewa, we may expect to find the Corn Mothers, even when the record is scant or missing. The Mothers may be renewed at the

[1] Read at the meeting of the American Anthropological Association, Dec. 28, 1928.

[2] *Honani* (Acoma).

ceremonies when they are to be brought out, but there is no distinctive renewal ritual as that for the Plains bundles. Offerings are made to the Mothers, but in the form of sprinkling corn meal upon them (as well as upon other sacrosanct objects) so that the appearance of the sacrifice is different from that of the Plains.

As part of the bundle complex we may consider other sacrosanct objects which are unwrapped and set out on Pueblo altars—the bird skins on the Hopi altar, and the sticks representing deceased society members, and on Hopi and other altars stones of curious formation and arrowpoints and blades all of which might have come out of any Plains bundle. The stones and points tend to be individual property in the nature of amulet. Probably every Pueblo ceremonialist has his own little bundle or bag of sacrosanct things which he contributes to the altar with which he is associated. The befeathered cylinder worn on the head of the warrior (Hopi-Zuñi) is in the nature of a bundle, for it contains objects taken from the enemy or other medicine.

Comparable are the anthropomorphic fetiches of the Pueblo Clown societies, perhaps the image of the Hopi Sand Altar Virgin, with the images used in the Sun dance. I do not include here the images or dolls of the kachina cult, as I impute them, together with the elaborately carved altar pieces, to Spanish influence. The friars took pains to teach the art of carving.[3]

Sacrosanct sticks are used by the Clown societies as sticks of office—the chief of the Ne'wekwe of Zuñi has such a baton; the Kurena of the Keres carry a rattle-stick, a crook with olivella shells, as does the Mother of the kachina (Hopi). The crook stick is used by the kachina dance announcer at Zuñi.[4] Of a different type is the "chief's stick" carried by a few chiefly kachina among the Hopi and by members of the tribal societies. These sticks are flat with feather or skin pendant from each end, very similar to sticks fashioned by war societies of the Plains. The canes of office of the Pueblo (Zuñi) war chiefs are in form Spanish but this use of pseudo-fetichistic sticks may be pre-Spanish.

[3] See The Memorial of Fray Alonso de Benavides, 33, 1630. Chicago. 1916.

[4] Parsons, Winter and Summer Dance Series in Zuñi in 1918. Univ. Calif. Publ. Am. Arch. Ethn., 17: 180–181, 1922.

Certain types of Pueblo prayer-sticks, I venture to say, have been influenced by the feathered lances, straight and crooked, of the Plains. I have in mind the crook stick with the cotton string drawn from the tip of the crook to the straight part of the stick (used by the Pekwin of Zuñi, by all the Jemez societies, by the Hopi youth at his first Winter Solstice ceremony), also the common Hopi type called *hotomni* where the pendant feathers are fastened equidistant down the length of the stick. The concept of prayer-stick as miniature weapon occurs, we know, among the Pueblos, in the miniature bow and arrow and war club.

Headdress, mask, and sacred paint.—The Buffalo headdress of the Plains Buffalo dance is in use in all the pueblos, and presumably the Buffalo headdress passed into the composition of the kachina mask of the horned type at Zuñi and elsewhere. Antlered headdresses are worn also in dances by both Plains and Pueblo tribes. Two of the Hopi tribal societies, Horns and Agaves, wear elaborate antlered headdress. In some of the Plains societies animal masks are in use as well as headdress, by the society chiefs, a restricted use which suggests that of the mask in the Keresan-Zuñi curing society which is worn only at initiations or in grave cases of curing. Besides the animal masks among the Plains there are clown masks. These clown or burlesque masks are in vogue among the western pueblos, where they are in the keeping of the Clown societies (Ne'wekwe at Zuñi,[5] Wöwöchimtu on First Mesa). These masks, both Plains and Pueblo, seem to me to be of a European type, but into that question of provenience I may not go at present nor into the question of the degree in which the Spanish mask may have influenced masks of the kachina type.[6] More pronounced than masking in the clown groups, apart from the Koyemshi, is facial pigmentation. (Note the black and white painting of the Kossa, Koshare, and Ne'wekwe, and the stripes on the face of Bitsitsi and of the Hopi Singers.) Face and body pigmentation has a sacrosanct character among the Pueblos

[5] Note their use, too, by the łewekwe or stick-swallowing society (M. C. Stevenson, The Zuñi Indians, 23rd Ann. Rept. Bur. Am. Ethn., 471, 477, 1901–2).

[6] See Spanish Elements in the Kachina Cult of the Pueblos. Proceedings of the 23rd International Congress of Americanists, 1928 (in proof).

as it may have among the Plains, e. g., on ceremonial shield or tipi or in the painting of initiates in the Sun dance. Before the kachina mask is put on, a black stripe is painted over the bridge of the nose and under the eyes of the impersonator, and until the body paint is washed off an impersonator, he remains taboo or sacred, *teshkwi* in Zuñi term.

Ritual: Where convenient, the kachina impersonator bathes in the river. Ritual bath or headwash is a very frequent performance among the Pueblos, where the sweat bath of the Plains and of the Navaho, did not take.[7] But the object of both river and sweat bath is ritual purification. Head-washing, to be sure, which in the western pueblos accompanies all forms of naming and initiation, is without any at least explicit purifying meaning, and may be ascribed in part, no doubt, to the Friars, who gave such great weight to the rite of baptism.

The rite of incensing among the Pueblos seems to be also one of mixed sources, Spanish as well as Indian. Puffing smoke on sacrosanct objects such as masks and altar fetiches looks European, whereas fumigating a patient or the property of a deceased person looks Indian. Probably the two practices should be considered as quite distinctive rites. The Plains practice of offering the pipe to a spirit or as a form of initiation to a man is again a distinctive rite, the Pueblo equivalent of which is sending a cigarette to a kachina group to invite them to dance or asking for anything ceremonial with tobacco or including a cigarette partly smoked, with other prayer offerings. In this connection, the ritual use of sage and of cedar by both Plains and Pueblos may be noted, for ritual smudge (Plains and Pueblo), for emetic (cedar, Pueblo), for medicine, for prayer-stick offering (sage, Pueblo, particularly Hopi).

Prayer-stick or feathers is outstanding in Pueblo ritual, and even more ubiquitous than the offering of feathers is that of meal. The lack of these sacrificial types among the Plains gives a different cast to their ritual of sacrifice. However food offerings other than meal are made by the Pueblos, deposited in the open or, on

[7] There is a reference to its former use at Isleta.

eating, crumbled indoors, bits are dropped on the ground, just as the Kiowa, for example, at meal time would hold up a bit of their meat to the Sun and then bury it. The Pueblo rite of fasting from food or drink while engaged in ceremonial enterprise is somewhat comparable with that of the Plains rite, more particularly in connection with the Sun dance. The Plains variety of fasting to get supernatural experience is not found among the Pueblos, although now and again one gets hints in the folk-tales that ritual abstinence is to provoke the compassion of the spirits quite as among the Plains.[8]

What has been called by Plains students the *iruska* complex of rites—enduring boiling water, fire-handling, stick-swallowing, jugglery at large—is to be found in various fragments among the Pueblos. Stirring boiling water without being burned occurs as a rite in the initiation into the Winter chieftaincy of the Tewa. (It occurs well integrated or rationalized—can heat hurt Winter or Ice men?).[9] Fire play is ritual of several societies at Zuñi[10] and of the Keresan Fire society, with which societies stick-swallowing is also associated. Reviving the dead, which is a Plains shaman trick or tradition, also figures in Pueblo tradition. The ability to go great distances, by flying or otherwise, and to see from a distance is imputed to Keresan and Isletan[11] as well as to Plains shamans. Among the Pueblos, however, these powers do not come distinctively through the spirits, more particularly through supernatural animals, although the power of flight was

---

[8] The theme, by the way, of the neglected or persecuted little boy "who knows something," i.e., has supernatural power, occurs quite commonly in Pueblo tales. Study of the distribution of this theme from the southwest to the northwest through Siberia to Jerusalem and into Europe and back into the Southwest were of interest.

[9] Compare, too, the Pueblo tale of the youth who puts on the coat of ice to endure the test of fire.

[10] At initiation ceremonial of the Uhuhukwe of Zuñi, Hehea kachina are chased with firebrands (The Zuñi Indians, 526), in a way reminiscent of the Fire dance of the Navaho. Hehea (Keresan, Heluta) is Tonenili of the Navaho. He has traits in common with Coyote (Stephen was told that the Navaho Fire dance was a dramatization of the Plains-Pueblo myth of fire-stealing by Coyote). Is there a possible etymological connection between *heluta* and *iruska*?

[11] These are outstanding attributes of the Fathers at Isleta. In this connection note the flights of the nun, Maria de Jesus, to the Pueblos. Benavides, 59, 276.

described to Father Dumarest as due to Eagle.[12] The powers to hunt and to cure, however, derive very generally among the Pueblos from Mountain Lion and from Bear. In the tales the individual in distress gets help from Spider-woman who gives "medicines," which may be compared in a way with the help from guardian spirits among the Plains. Among the Hopi there are shrines to Spider-woman, but they are not visited by the individual on his own account. Individual supernatural experience is not sought by the Pueblos. As Dr. Bunzel has been pointing out, individualistic experience of no kind is sought by them. The differentiation here between Pueblos and Plains may be well seen in the seeking of omens by the Pueblos as against the Plains seeking of visions or of supernatural helpers.[13] The Zuñi war chief was expected to go at night to the River and listen for sounds, propitious and unpropitious. The celebrant of the Hopi Water serpent ceremony has also to listen at the spring for sounds, the Antelopes[14] spend a night at the spring for good visions, and in some instances the depositor of prayer-sticks is told to withdraw after placing his sticks and later return to observe their position. Such omens are for the use of the groups at large, not for the individual seeker. Consequently the ritual messenger reports them to his society There is no such secretiveness about individualistic supernatural experience as is seen among the Plains. But not all supernatural experience is individualistic among the Plains. There is shamanistic organization, particularly with animal mentors or patrons, and this type is a character, too, of the early *iruska* complex, parallel parts of which we noted among the Pueblos.

Along lines of ceremonial organization, however, it is in the organization for war that Pueblo-Plains parallels are to be looked for.

Now the matter of the Pueblo organization for war is excessively problematic, it is obsolete and besides it has been peculiarly

---

[12] Notes on Cochiti, New Mexico. Mem. Am. Anthr. Assoc., 6: 212, 1919.

[13] Elements of the vision = guardian spirit complex are present among the Pueblos, as Dr. Benedict writes (The Concept of the Guardian Spirit in North America, Mem. Am. Anthr. Assoc., 29: 40, 1923), even if the guardian spirit itself is lacking.

[14] See below.

subject to Spanish influence. Early in the eighteenth century there was imposed upon the Pueblos by royal edict a secular governmental organization of governor and lieutenant and sheriffs or captains. These groups became the executives or mouthpieces for the ceremonialists who remained the real sources of authority. However, these Hispanicised groups of officers took over, I surmise, some of the functions of the old war or police groups, at least whenever these became extinct. To what extent the present Outside chiefs or war captains of the Keres and Tewa are Pueblo or Spanish, defies analysis. They are appointed as secular officers with the governor and his lieutenants, but they safeguard the ceremonies against intruders including witches, they maintain ceremonial conformity, and they make systematic prayer-stick offerings. The bow priesthood at Zuñi and the *kalektaka* group of the Hopi appear to represent the earlier pre-Spanish type of organization. At Taos and Isleta a third policing type is seen in the chiefs or little chiefs, younger men who are attached to the governor, possibly as a modernized or Hispanic form of the Plains police or *akichita* societies.

Of these police or military societies, more archaic parallels are to be seen in some of the Hopi societies—more particularly in the tribal societies, Tataukyamu (Singers)[15] and Wöwöchimtu (Old men),[16] Agaves, and Horns. These are the four societies into one of which every youth is initiated. All four have particular paints and headdresses. There is a rule against going in front of the Wöwöchimtu, on pain of twisting sickness, which would have to be treated by the society chief, and the woman member of the associated woman's society, the Mamzrau, would have her mouth twisted, if she absented herself from the ceremonials.[17] The functions of the Agaves and Horns are those of scout and guard; they do not dance. The Singers and Wöwöchimtu have

[15] So translated by Voth. Stephen sees a possible etymology from a term meaning to carry on the back, as are the novices.

[16] This, too, is an approximate, but more certain, etymology. In the Plains societies which are not graded by age, there is a tendency for the older men to go into one society (Lowie, Anthrop. Pap. Mus. Nat. Hist., 11: 904). This may once have occurred among the Hopi.

[17] Stephen's Journal in Ms.

dance steps and songs, of which some are of a phallic or obscene character, as is their clownish behavior. There are no women in these four societies, but the women societies are associated with the men's, conceptually and in actual behavior.

Then there are the Snake and Antelope societies. The Snakes were warriors, according to Hopi tradition. When they went on the war trail, they carried battle axe and club, not spear or bow and arrow.

> They knew no fear and marched up to the enemy and seized him by the throat, like a snake, and knocked him on the head with axe or club.[18]

The Antelopes were old men who remained in the kiva singing and praying while the Snakes were fighting. In Snake-Antelope ceremonial many details corroborate this tradition of sometime military character.

The out-and-out clown groups of First Mesa of which two out of the three are known to be borrowed from Zuñi and the Tewa; the Zuñi clowns—Ne'wekwe (and their affiliated society, the Shi'wanakwe) and Koyemshi; the moiety clown groups of Isleta—Black Eyes and Red Eyes or Gophers; the Koshare and Kurena of the Keres, the Kossa of the Tewa; the Tabösh and Tsunta tabösh of Jemez; the Black Eyes of Taos and Picuris—all these have various traits of the Plains military societies: inverted speech or talking backwards, foolhardiness[19] (more particularly in eating), stalking a stray creature, dog or chicken (instead of buffalo), showing mock fear, initiating by trespass, and inspiring fear. Their Plains-like fetiches, sacrosanct sticks, and pigmentation we have already mentioned. The representative of the supernatural patron of the Ne'wekwe carries a whistle as well as a baton and in his ceremony walks with arms crossed on his chest, an eagle feather in each hand. His face is striped in white. Wrapped in his blanket, he strides through the on-lookers at the Molawia ceremony the very picture of a Plains high chief.

Bitsitsi is a representative of Paiyetemu (Youth, in Keresan), the Sun youth. (A Ne'wekwe sometimes comes out to play with

[18] Stephen's Journal in Ms.
[19] Cf. Lowie, 960–1.

the sun painted on his back.)[20] As a kachina the Sun is also represented. By both Pueblos and Plains the Sun is greatly regarded. In Tewa-Zuñi tale the Sun appears as a handsome man to his sons, the war gods, or to the neglected little boy, giving them a desirable outfit and, in the latter case, an admirable name, a vision of which the conceptualism seems strikingly Plains-like. In Pueblo tale the Sun's sons, the war gods, are associated, more or less obscurely, with the Morning Star, and the Pleiades and Orion have a distinct war association among the Hopi. These constellations are observed very generally by the Pueblos, and counted among the supernaturals. Lightning is a Pueblo supernatural, although at times Lightning like the Rainbow seems to be rather an attribute of the Rain or Storm spirits than a separate entity. Wind is a malevolent spirit throughout the Pueblos, and particularised among the Hopi and Tewa as a mean old woman. Mountain ogres or cannibalistic giants figure among both Pueblos and Plains. Distinctively Pueblo are the Rain or Cloud spirits with their varying association with the Dead and with the chiefs of the Directions, and the Mothers of the Underworld, the Corn mothers. At first sight the character of Plains religion seems far more pantheistic than that of Pueblo religion. But when we consider such collective pantheistic terms as Kopishtaiya (Keres) and Kayé (Tewa) and when we realize how almost any creature, human or animal, as well as the anthropomorphically cosmic, can find a place among the kachina, the impression of this differentiation loses weight.

The Spirits, the behavior of ceremonial groups, rites and ritual objects—in these particulars we have been finding our parallels, without note of the ceremonial organization at large or the ceremonial calendar. Along these lines there is little to compare, in the first case because ceremonial organization as a whole is naturally closely bound up with the general social organization which between Pueblo and Plains tribes differs considerably,—maternal clan, paternal moiety, and town chieftaincies giving a character to the Pueblos which is generally lacking in the Plains,—in the second case because the calendar of an agricultural people con-

[20] Winter and Summer Dance Series in Zuñi, 194.

cerned primarily with season, weather, and crops naturally varies from calendars determined by hunters and warriors.

With an outstandingly agricultural tribe in the Plains area, the Pawnee, parallels in calendar and organization appear, so strikingly indeed that I should like to conclude our discussion with a special comparison of Pueblo and Pawnee ceremonialism.

As at Zuñi, there is a marked distinction among the Pawnee between the medicine or curing societies and the societies possessed of a rain bundle which is referred to as "rain-storm wrapped up" and consists of two decorated ears of corn,[21] known, in Pueblo fashion, as the mother of the people. These are white ears with glumes or tasseled tips, perfectly kernelled,[22] with the first section of the stem left on.[23] In each bundle society there are four leaders or chiefs whose position is hereditary; presumably through the maternal line they are the descendants of the first keepers of the bundle.[24] The chiefs of the society choose the members, within limitations, from kindred of the deceased members, a method of selection not unknown to the Hopi and the people of Jemez. The chief of the society is the keeper of the ritual and the bundle, although actually the keeper is the wife, often the sister, of the chief, again a marked Hopi and Zuñi feature.

There is a Pueblo-like hierarchic council, consisting of the chiefs of the four main bundles, and these chiefs rotate in the office of supreme chief, each chief holding office for a half year,[25] reminding us of the terms of office of the Winter Man and the Summer Man of the Tewa. Each of the four paramount Pawnee chiefs selects a warrior who in turn selects three police, men with clubs. These positions of warrior and police are life long. Again

[21] G. A. Dorsey, The Pawnee, 49, 93. Pub. Carnegie Institution, 1906; see also Murie and Wissler, in Ms., p. 234.

[22] Were a grain lost, the Mother would cry. Compare the Cochiti story of the sacrosanct ear that were a grain lost could not speak. (Notes on Cochiti, New Mexico, 231–232.)

[23] Murie and Wissler, 255, 266.

[24] Ib., 157.

[25] Murie and Wissler, 145. The terms are determined by the first appearance of certain stars—approximately February 1 and September 1. Cf. the relations between the Tewa Town chiefs and the stars. Parsons, Tewa Social Organization. Mem. Am. Anthr. Assoc., No. 36 (in press).

we are reminded of certain relations between the secular and ceremonial officers of the Pueblos. The crier for the Pawnee priest[26] recalls the Zuñi and Hopi crier.

The Pawnee medicine-men derive their powers from living creatures, and in their processions the medicine-men costume themselves to represent their animal mentors[27]—Pueblo traits.

There are two Pawnee medicine lodges, West and East. In each bundle society there are north and south moieties, the north side leading in winter ceremonies, the south side, in summer,[28] a seasonal division bringing to mind that of the Tewa and of Taos.

The Pawnee bundle rituals form an annual series, beginning with the planting and ending with the harvest, i.e., there is a ceremonial calendar which may be compared, if only loosely, with the Pueblo calendar, although the outstanding Pawnee ceremony is typically Plains, for it occurs at the first thunder in the spring when the lance paraphernalia are renewed. Possibly the early spring pre-planting ceremonies of field cleansing or exorcism by the Pueblo war or clown societies are corresponding performances. Phallic or fertility practices attach to both Pueblo and Pawnee [29] war groups. Specifically the spring to autumn bundle rituals may be compared with the summer rain retreats of Zuñi or Jemez.

Pueblo-like offerings of eagle feathers and of beads are made by the Pawnee and offerings may be thrown into water, into the river, or into a certain pool in a crater cone;[30] and there are several references to what I take to be prayer-sticks[31] or prayer-feathers,[32]

---

[26] G. A. Dorsey, Traditions of the Skidi Pawnee. Mem. Am. Folk-Lore Society, 8: 336, 1904.

[27] In one of the tales the chief priest dresses himself to represent the god. The Pawnee, 29.

[28] Murie and Wissler, 145.

[29] Murie and Wissler, 125.

[30] Grinnell, 119, 134, 359.

[31] The Pawnee, 29, 54, 55; J. R. Murie, Pawnee Indian Societies (Anthrop. Pap. Mus. Nat. Hist., 11: 628.) In war, ritual offerings of tobacco, blue beads, etc., are fastened to willow sticks, measured from the tip of the middle finger to the shoulder, pointed at the butt, decorated and stained red. These sticks are "planted" in the different directions, with prayer. (Murie and Wissler, 95, 315, 390, 423.)

[32] The Pawnee, 98.

and downy red feathers are worn in the hair.[33] Other ritual traits in common with Pueblo ritual are for the most part among the general Plains rites we have already surveyed as common to the Pueblos also: jugglery; spear or arrow swallowing;[34] fire-walking; ceremonial continence before such shamanistic feats; clowns;[35] an anthropomorphic image in the war bundle;[36] food offering (corn) into fire;[37] burying food offerings in the four directions;[38] exorcism by fumigation;[39] blowing smoke to the corn fetich or other fetich;[40] offering smoke in the six directions, to the gods or to deceased medicine men;[41] smoking in sign of agreeing to or accepting a proposal. To these we may add: spitting medicine; the use of arrowpoint in curing or exorcism; dancing before the doors of leading men who make presents; ritual continence, fasting, and bathing.[42]

Special[42a] Pueblo similarities occur in the use of a water monster (serpent) image;[43] sky stones (Pueblo thunder or lightning stones or points); tying the penis in ritual (a Zuñi Koyemshi practice); painting the face of the warrior with vertical parallels, two on each cheek;[44] breathing on the sacrosanct;[45] tree conservation ritual;[46] the occurrence of a ceremonial lodge under water;[47] foot-racing with the one overtaking snatching at the fetich;[48] giving the newsbringer a smoke before hearing his news;[49] new fire ritual.

[33] Murie and Wissler, 98.
[34] Ib., 589
[35] Dressed as wolves; compare Isleta and Taos practice.
[36] Murie and Wissler, 119.
[37] Ib., 101.
[38] Traditions of the Skidi Pawnee, 47.
[39] The Pawnee, 79; Murie and Wissler, 87, 97–8, 239.
[40] Traditions of the Skidi Pawnee, 56; The Pawnee, 83; Murie and Wissler, 239.
[41] Murie and Wissler, 96–7, 520.
[42] Ib., 529.
[42a] I do not mean exclusive. A study of the distribution of Indian ritual such as is promised us by Dr. Cole is indispensable to delimiting comparisons between any groups.
[43] Ib., 515.
[44] Ib., 117, 313, 418.
[45] Ib., 213, 270, 491.
[46] Ib., 509.
[47] Ib., 508.
[48] Ib., 238. [49] Ib., 242.

The Pawnee pantheon is divided much as is the Pueblo into the power-giving animals and the cosmic supernaturals. There are the Earth or Corn Mother, the rain gods, Clouds, Wind, Thunder, and the Stars, Morning Star and Evening Star being of high rank.[50] As among the Pueblos, Morning Star is associated with the War cult.[51] Some of the gods are world quarter gods or gods of the directions.[52] The animals, wildcat, bear, mountain lion, wolf, represent gods of the world quarters.[53] It is notable that the buffalo, as the deer, etc., among the Pueblos, are supposed, if properly addressed, to let themselves be slaughtered for the good of the people.[54] The animals are associated with the doctors, the cosmic spirits with the priests[55]—as at Zuñi.

In the Pawnee origin myth it is notable that the rain bundles, which quite in the Pueblo vernacular are said to be "handed down," have been carried from the Southwest from whence the people came,[56] i. e., the origin myth is a migration myth, again a Pueblo feature. In the seventeenth century the Pawnee raided for horses into the Pueblo area, but long before that, prior to their northeasterly migrations, may they not have been in closer and more pacific contact with the Pueblos? At any rate when the cultivation of maize was acquired by the Pawnee it carried ideology and ritualism similar to the Pueblo. Here, possibly, in a maize complex of ritual together with technique, the Southwest imparted its culture on a more notable scale than Kroeber has allowed for in his last masterly contribution to the discussion of the distribution of cultural traits in North America.[57]

HARRISON, NEW YORK

[50] Sun and Moon are of minor importance, the star cult is preeminent. The preeminence of Sun in the Pueblo pantheon is a striking differentiation.

[51] We may note that he has a little brother. (Murie and Wissler, 306).

[52] Traditions of the Skidi Pawnee, 47; The Pawnee, 14.

[53] The Pawnee, 72, n. 1.

[54] Ib., 104, n. 1.

[55] Murie and Wissler, 497.

[56] Grinnell, 352.

[57] Native Culture of the Southwest. Univ. Calif. Publ. Am. Arch. Ethn., vol. 23, no. 9, 1928.

THE SERPENT IN AFRICAN BELIEF AND CUSTOM

By WILFRID D. HAMBLY

THIS subject involves the preliminary difficulty of selection and definition of terms. A survey of the literature dealing with the serpent in relation to human beliefs and practices, reveals a vague and inconsistent use of the word "worship." The majority of writers have shown themselves willing to gather under this heading almost any form of cult or superstition relating to the serpent. Archaeological evidence, showing the serpent in architectural and ceramic design has led to unwarranted suppositions respecting the magico-religious significance of the designs. The difficulty of supplying a rigid and logical definition of an act of worship is indisputable. But in practice confusion of thought may be avoided by using the word only in connection with certain beliefs and acts. These might reasonably include ideas of a superhuman being, a priesthood, provision of a special house or locality, also the employment of sacrifice and ritual procedure. The word "cult" may be used to designate beliefs and acts, whose nature is less clearly defined than is the case with concepts and ceremonies surrounding an act of worship. In a third category are a large and miscellaneous assortment of superstitions. These include a use of the fat of snakes for making medicines, wearing of amulets to guard against snake bite, magical means, other than amuletic, of curing snake bite or becoming immune to the poison.

The subject of serpent worship has suffered from hasty generalizations and a lack of detailed treatment. Consequently there has been assumption of similarities and identities where they do not exist. With regard to Africa, Frobenius has published a map purporting to give a distributional survey of beliefs centering round the serpent. In the absence of all but the scantiest information accompanying the map, it is impossible to use, evaluate, or criticize the representation.

All the data relating to serpent beliefs in Africa may be conveniently arranged under the following headings:

Python worship
Rainbow-guardian-snakes and rain
The birth-snake and fecundity
Snake-souls, reincarnation, transmigration, totemism
Immunity, snake-medicine, general superstitions

After the data have been collected under these headings, most of which fall into several sub-headings, a number of problems present themselves. Prominent among these is the possibility of external origin.

If the origin of African snake beliefs is thought not to be indigenous, there arise a number of queries relating to a possible internal origin. These comprise:

Zoological evidence which might give rise to the beliefs in question
Similarities of python worship in the East and West of the continent and the possibility of their common origin
Association, if any, between python worship and other snake beliefs
Geographical distribution, and linkage of snake-beliefs with other cultural elements.

The word "totemism" is not, perhaps, quite justifiable in connection with African snake beliefs. In the so-called totemism there is usually nothing more than the acceptance of the snake as a clan badge, belief in transmigration of souls into snakes, refusal to eat the snake, and a general respect for the reptile.

The study of python worship may well begin with the account given in Bosman's *Description of the Gulf of Guinée* (1700). Speaking of Whydah snake worshippers, he says,

Their principal god is a certain sort of snake which professes the chief rank among their gods. They esteem the serpent their extreme good and general bliss.

The narrator then describes the homage of the people and their king; the invocation of the snake in times of war and drought; and the nature of the priesthood. With regard to the latter Bosman says:

I am of opinion that the roguish priests sweep all the offerings to themselves, and doubtless make merry with them.

On the whole this account is well substantiated by many subsequent observers, who have left reports too long for detailed

comparison. Burton (1864) described the snake temple at Whydah. This observer saw a native bring back a wandering python to the temple. Before raising the reptile the man dusted his forehead as if groveling before a king. In former times death was the penalty for accidentally killing a python, and a fine was imposed for merely meeting the creature. The narrative of Skertchley (1874) agrees with that of Burton. According to this writer, a child touched by a python is claimed for the priesthood, which exacts from the parents fees for maintenance and tuition. Ellis (1890) carefully explains that the python contains the spirit of a god of wisdom, bliss, and benefaction. A native who meets a python has to say, "You are my father and my mother, be propitious to me." Ellis mentions 2000 wives of the python god who are secretly married to the priests. In wild orgies in connection with festivals for worshiping the python these women dance themselves into hysteria. In addition to other ceremonies there is a special occasion for a procession round the town, at which time all people have to remain indoors without watching the python bearers. Leonard, writing in 1906, says that ophiolatry is to be found all over the Niger delta. The pythons formerly at Benin symbolized the war god Ogidia, a name which is likewise employed at Brass. At times the spirit of the god takes possession of the priest who then speaks in a dialect of Old Calabar. To some extent the priest induces this possession by lying in the mud of the river and starving himself for seven days. Very seldom is a human being attacked by a python, but when this occurs no person other than the priest may effect a rescue.

Talbot (1912), Thomas (1914), and Basden (1921) have all reported on what may be described as very strong cults of the python. The evidence of these writers strongly suggests that practices and beliefs prevailing in Nigeria are residual from a one-time flourishing python worship.

A survey of Africa in search of python worship is negative until the region of Lake Victoria Nyanza is reached. Accounts of python worship in Uganda have been supplied by Canon J. Roscoe who spent twenty-five years in this region. His contributions to the subject are dated 1909 and 1923.

Worship of the python is confined almost entirely to one clan, in Budu, south Uganda. The temple, like those of Whydah, is a large conical hut built of poles and thatched with grass. On one side of the building is the place of the snake and his guardian, a woman who is required to remain celibate. Over a log and a stool, a bark cloth is stretched for the python to lie upon. In one side of the building is a circular hole so that the python is free to go to the banks of the river, where it feeds on tethered animals. In addition to this diet the python is fed daily on milk from sacred cows which are kept on an adjacent island. The python is supposed to give success in fishing because he has power over the river and all that is in it. Worship is at new moon, at which time childless men and women petition for offspring. For seven days all work is stopped in the vicinity of the temple when a time has been arranged for the ceremonies. A priest, whose office is hereditary, drinks from the bowl of the python, then takes a draught of beer. The spirit of the python goes into the medium, who wriggles on the floor like a snake, uttering strange sounds, and talking in a language which has to be interpreted to the worshipers. When the medium is in a state of coma an interpreter explains to the people what they must do in order to realize their desires. If children are born to the supplicants, they must bring an offering to the python. The Bahima and Banyankole believe that their royal dead enter pythons, which enjoy immunity in a special reservation. At one time the kings of Uganda used to send messengers to ask the sacred python to grant children to the royal house. In East Africa, as in the West, these are many scattered beliefs which suggest themselves as survivals of a more widespread cult.

In all essential points the python worship of the East and the West are the same, and a perusal of the accounts leads to belief that the origins are not independent. Against this it may be urged that, in the first place, the python is likely to attract attention anywhere. The idea of an indwelling spirit, also the formation of a priesthood with ecstatic dancing are factors which might, and do, readily arise in connection with all kinds of adoration. The value of the resemblances, numbering at least ten, lies

in the fact that they all occur together in each of the python-worshipping centers.

Knowledge of racial migrations in Africa points to the probability that python worship passed across the continent from East to West. There is not a fragment of evidence to suggest that the Hamites or Semites brought python worship with them, though perhaps it is possible to show the probability that these immigrant waves brought other snake beliefs which are now accepted as typically African. The most reasonable suggestion is that python worship is indigenous to the early Negroes of Uganda, and that the migration was of a racial character. Forms of python worship are found in their fullest structure and activity at both ends of a known migratory line. The terminus of the Congo forest line of the migration is in Loango, where snake beliefs and practices are strong, though there is no python worship. The Dinka, living a third of the way across from East to West, encourage pythons to live in their huts. According to Schweinfurth, the reptiles used to be fed, respected, and called by name. Python worship is most perfect in detail in Uganda, its hypothetical point of origin. The keeping of sacred cows for supplying milk to the python looks like a Hamitic addition. It is a fact that when the Negroes, who were driven westward by racial pressure, had passed across the continent, they were fifteen degrees, or thereabout, north of the equator, that is to the north of Dahomey, Ashanti, and Nigeria. Owing to pressure from the Fulani and Haussa, these Negroes had to move southward into coast regions of the area from Liberia to the mouth of the Niger. It is precisely in these regions that python worship, cults, and superstitions are found in greatest strength and abundance today. The python itself has a distribution, in many species, from the south of the Sahara to Natal. There is no zoological factor which determines the present location of python worship in these centers.

The rainbow snake, often guardian monster of wells, has a wide distribution that cannot be correlated with any particular area and type of culture. There is, however, the general impression that the predatory snake monster of African folklore owes something to Semitic influence. This impression becomes stronger during the perusal of Robertson Smith's *Religion of the Semites*,

though it has to be admitted that Arabian stories of jinn-possessed snakes bear only a general resemblance to similar African tales. In view of extensive Semitic migrations in Africa, the assumption of some connection between the folklore of Semites and Negroes is justified. Demonstration of the connection is a difficult matter, for on a careful analysis of stories the reader has to admit that the resemblance rests on a few simple generic ideas. The "ring" of the stories is the same. If one should decide that African concepts of rainbow-snake monsters of a predatory kind have been derived from Semitic sources, there is the difficulty of explaining the rainbow-snakes which are a staple belief of the aborigines of Australia. The brilliant colors of many snakes, combined with their hibernation and reappearance after the first rains, might suggest a ready and spontaneous development of rainbow-snake myths. The existence of pythons over twenty feet long is no doubt sufficient to suggest a fable of snake monsters, even to the most obtuse Negro.

The worship of pythons in Africa is fundamentally a fertility cult, and there is a possibility that ideas of the birth snake, which announces conception by visiting a hut, are a bye-product from dissolution of a pristine python worship. Hesitation is justifiable between this opinion and the idea that the birth-snake is a variant of the snake-ancestor-visitor concept, which is definitely Hamitic in distribution. On the whole, the idea of the snake visitor announcing a conception, is nearer to the ancestral-snake-visitor concept than it is to any other belief.

A survey of the data relating to transformations and reincarnations falls into the following categories:

Reincarnation in snakes. Of gods and demons.
Of kings and chiefs.
Of commoners, including women and children.

Transformation into snakes during life:
A living man can turn himself into a snake.
A living man can send his soul into a snake.
A man can command a snake to do his will.
A man may turn another person into a snake which will then obey him.

Ideas concerning immunity from snakes fall into four main categories:

1. Inherited power over snakes. This is a family asset. Immunity through membership of a secret society having a snake as its emblem. Immunity as a result of training which includes inoculation.
2. Treatment of snake bite by methods both rational and magical.
3. The wearing of charms against snake bite.
4. The use of snake's fat, snake's skin, or pulverized snake as a cure for the bite.

Such a grouping of beliefs does not represent so many cleanly cut divisions, each having a definite geographical distribution. On the contrary, the categories are valuable only as a means of giving some order and precision to what appears, on first reading, to be an inextricable confusion of concepts. On the whole there is no good reason for thinking that these beliefs and practices result from the breaking down of a well ordered python worship. Ideas of transformation and reincarnation are common the world over, so also are the medicinal uses of parts of animals, and the treatment of wounds by magical methods of a homeopathic kind. In both civilization and savagery certain men have good control, knowledge of, and power over animals. It would be a fascinating theoretical belief which regarded men who claim immunity from snake bite as representatives of the priestly stock who used to take charge of the snake temples. As a rule the python, a non-poisonous snake, is the inhabitant of temples; though there are here and there sacred groves in which poisonous snakes are kept. It is just possible that men who claim that their power and immunity are hereditary are of the old priestly lineage.

A quest for some extraneous source of African python worship and other cults and superstitions is on the whole negative. A belief in the influence of Semitic folklore on African stories of guardian snakes, rainbow snakes, and predatory snake monsters embodying demons, has already been expressed. In addition to this the folklore of Irania and Armenia leaves the impression that the East African idea of the ancestral snake visiting the house is a Hamitic importation. Southeastern Asia is regarded as the home of Hamito-Semitic peoples, and for this region Ananikian has some information bearing on the problem. Common to East Africa and the hypothetical home of the Hamites is the idea of a snake ancestor visiting the house. Such a caller has to

be fed with milk, or bad luck will follow. What are now folklore tales in Irania and Armenia are current practices and beliefs in a region stretching from Lake Rudolf to Natal. The Zulu have always held tenaciously to this belief of the snake ancestor visiting the kraal. Zulu invasion passed from South to North over country which, ex-hypothesi, was in acceptance of the snake-ancestor-visitor idea, communicated by the passage of Hamites from North to South. This suggestion of a spread and reflux of the concept would account for its firm establishment from the Suk to the Zulu.

So persistent have been the claims that serpent worship, tattooing, and many other factors have originated in and spread from Egypt, that it is natural to examine the snake-beliefs of ancient Egypt somewhat closely. Theoretically the prevalence of well defined snake-worship in Egypt should have had its influence on African beliefs. Is this the case? With some persistence I examined the claim that tattooing originated in Egypt, but found the evidence of tattooing in ancient Egypt to be far too slender to support any such hypothesis. With the claims made in regard to snake worship I have fared little better.

Sayce has stated that there is a general Egyptian present-day belief in the divine character of the serpent. Superstition still says that as a serpent grows old wings protrude from the body. There are also legends of fire-spitting serpents. A boatman related that he had lost the sight of one eye through an attack from one of these monsters. Here there is an interesting contact of zoological fact and fable. A kind of spitting cobra is found as far north as Assuan, and it is more than likely that the man met his misfortune in this way. Loveridge and others have recently given convincing evidence that the spitting cobra aims at the face, and the result may be severe inflammation. The snake-guardian of the house is reported to be an Egyptian present-day belief. Lucas, 1714, described a wonder-working serpent of Egypt, which was revered by the inhabitants.

Several Egyptologists have extracted from the Book of the Dead and other documents, a considerable amount of information respecting the presence of snake-beliefs in early dynastic

Egypt, and later. In the volumes *Ancient Records of Egypt*, Breasted has given many references to the Uraeus. "Dreadful is thy serpent crest among them," "I mixed for them ointment for their serpent crests," and many similar references, make the reader willing to accept Petrie's opinion that the uraeus symbolized royal power, divine life, judgment, life giving, and knowledge. The serpent Nehebka was one of the forty-two judges of the dead, and, according to the Book of the Dead, this serpent points out the way to the underworld. Amulets in serpent form were numerous. The sun god is generally represented with the head of a sparrow-hawk. On the top of the head is a disk representing the sun, and around this is the fire-spitting serpent, which destroys the sun's enemies. Isis is represented as a serpent, and to accommodate himself to her Osiris takes serpent form.

The song in praise of Ra illustrates the well established idea of the serpent as a fiend. "Thou passeth through the heights of heaven; thy heart swelleth with joy. The serpent fiend has fallen; his arms are cut off; the knife hath cut asunder his joints." A vignette from the papyrus of Ani shows Ani, clad in white, spearing the serpent fiend. The papyrus of Nu has a section on the repulsing of serpents and worms. The serpent is mentioned among secret names connected with magical practices. Ermann gives a translation which reads:

> As a preventive against witches, cut off the head and wings of a large scarabaeus beetle. Cook these parts in serpent's fat and drink the mixture.

Lexa has published translations of Pyramid Texts, one of which contains a formula for protection against serpents, and another to be used for directing serpents against an enemy.

These ideas of the serpent in Egypt are far too general to serve as a basis of comparison with those of Negro Africa or any other region. Still less will the snake-concepts of Egypt serve to bolster up a theory that the origin of snake worship was in Egypt. What is there of a specific kind to correlate in any way with the python worship of East and West Africa?

If, however, the problem is approached from a zoological point of view, there is good ground for believing that any of the

beliefs allied with the serpent might easily arise repeatedly and independently. The main points bearing on the structure and habits of snakes may be conveniently summarized under the following headings:

Quick noiseless movements which make the reptile appear and disappear.
The habit of living near graves, hollow trees, old walls, and ant hills.
Enormous size and crushing power of the python.
The bites of poisonous snakes have a quick, and to the native mind, magical mode of operating.
Darting out of a forked tongue.
Often brilliant colors and color phases.
The viviparous snakes bring forth large broods. The python lays a large number of eggs.
Two headed snakes are of two kinds. There are those which are so called because of the slender head and a habit of raising the tail when disturbed. More rarely there is an anatomical malformation which causes the snake to have two heads which bifurcate at the cervical vertebrae. Hibernation during cold and drought. Snakes reappear with the seasonal rain; they swim well, and pythons may be seen in forest pools.
The habit of hissing and spreading a hood.
Peculiar growths such as cephalic protuberances and spinal ridges. These have been exaggerated in cave paintings and folklore stories.
Some snakes have a quadruple penis. All snakes have a double penis. Withdrawal is by invagination, therefore copulation is a lengthy process.
The habit of spitting venom.
Peculiar method of swallowing, during which the epiglottis is protruded in tubular form. Thus breathing is possible, when to all appearances the reptile should be suffocated.

If these points relating to structure and habit are borne in mind in relation to rainbow snakes and rainmaking, fecundity and phallicism, reincarnation, and snake monsters, there must follow the feeling that there is no imperative need to search in Egypt or elsewhere for the genesis of African snake beliefs.

Lack of space has forbidden detailed discussion, but this will probably appear in book form with an adequate bibliography. The details here given, combined with the general impression of the evidence as a whole, give an orderly sequence of ideas to what has been a heterogeneous collection of beliefs, usually spoken of as snake worship. Perhaps the nature of the subject, which is very ancient and complex, makes it inevitable that the investigator should be left with certain clear general impressions, rather than a number of points, each of which is capable of complete

demonstration. The most important items arising from the inquiry are:

1. African snake-beliefs are logically classified into, python worship, ideas of fecundity, phallicism, and productiveness generally. Further, there is a reincarnation-transformation-totemic complex of ideas. The rainbow-snake and guardian-monster myths form a class of ideas. There is a series of beliefs centering round concepts of immunity from, and power over snakes.

2. Examination of African python worship, in relation to snake cults from other parts of the world, provides no proof that Africa received these beliefs and practices from outside her own borders. The evidence is strongly in favor of an indigenous and ancient origin of python worship. Some other beliefs are of possible Asiatic origin; these may have entered Africa through Hamitic and Semitic agency.

3. The habits, habitats, and anatomical structure of snakes is such as to encourage (1) and (2). Within the African continent itself migration of ideas has played a part. This is probably true with regard to python worship; the ancestral snake visiting the home; and the myths of rainbow snakes and snake monsters. There is fairly easy communication from East to West along the north of the forest zone, with more facile transit still down the east coast. Snake beliefs are fundamentally concerned with transmigration, reincarnation, and fecundity. They have therefore a dynamic force in all grades of society, because the concepts are concerned with what is elementary and basic.

4. There is nothing more than a superficial resemblance between the snake-beliefs of ancient Egypt and those of Negro Africa.

5. There is a strong probability that the Hamitic invaders introduced the idea of the ancestral snake visiting the home. The concept was further strengthened by a northerly reflux of Zulu peoples. Arabian influence must be allowed for in African folklore relating to snake-monsters tenanted by jinns. The snake which announces a conception is in some way generically connected with the ancestral snake visitor, but the two beliefs are not identical.

FIELD MUSEUM OF NATURAL HISTORY
CHICAGO, ILLINOIS

BIBLIOGRAPHY

(Quoted in order of occurrence in the text.)

BOSMAN, W. Description of the Gulf of Guinée (Utrecht, 1705).

BURTON, R. F. A Mission to the King of Dahomey (London, 1864), 2: 93.

SKERTCHLEY, J. A. Dahomey As It Is (London, 1874), 55.

ELLIS, A. B. The Ewe-Speaking Peoples of the Slave Coast (London, 1890), 54, 60–63; and other works by this author.

LEONARD, A. G. The Lower Niger and Its Tribes (London, 1906), 329.

TALBOT, P. A. In The Shadow of the Bush (London, 1912). Life in Southern Nigeria (London, 1923). The People of Southern Nigeria (Oxford, 1926).

THOMAS, N. W. Anthropological Report of the Ibo-Speaking Peoples of Nigeria (London, 1914), part 1: 46; part 4: 22, 29.

BASDEN, G. T. Among the Ibos of Nigeria (London, 1921), 217.

ROSCOE, J. The Banyankole (Cambridge, 1923), 61. The Bakitara (Cambridge, 1923), 42, 44. J.R.A.I., 39: 189, 1909. Man, No. 57, 1909. J.R.A.I., 37: 102, 1907.

SMITH, ROBERTSON. Lectures on Religion of the Semites (London, 1901), 120, 133, 168.

BROWN, A. R. Rainbow Snake Myths of Australia. J.R.A.I., 56: 19, 1926.

ANINAKIAN, M. H. Mythology of All Races (Boston, 1925), 57: 73.

HAMBLY, W. D. The History of Tattooing and Its Significance (London, 1925).

SAYCE, A. H. Serpent Worship in Ancient and Modern Egypt. Contemporary Review, October, 1893.

LOVERIDGE, A. Notes on Snakes and Snake Bites in East Africa. Bull. Antiquarian Inst. of Am. Phil., 11: 106, 1928.

BREASTED, J. H. Ancient Records of Egypt (Chicago, 1907).

LEXA, F. La Magie dans L'Egypte Antique (Paris, 1925), tome 2: 1.

SCHMIDT, K. P. Herpetology of the Belgian Congo. Am. Mus. Nat. Hist., v. 49, art. 1, July, 1923.

THE REIGN OF HUEMAC

Translated from the Aztec Text of "The Annals of Quauhtitlan."

By B. L. WHORF

HUEMAC appears to have been a ruler of the Toltecs and their allies in the period just preceding the breaking up of the Toltec power and the disappearance of this people from the page of history. By some students of the subject he is considered to be the same personage as Quetzalcoatl, but seen through an account composed under quite different political and religious influences and handed down separately from those channels and influences that bring to us the stories connected with the more familiar name.

At all events the figure of Huemac, through the curdled gloom that enshrouds his portion of time and space, glimmers toward us with enough of historicity and significance, both from what is told of him and from the general importance of his period, to be of distinct interest to the student of ancient America. Much has been written about Quetzalcoatl; very little about Huemac. The writer, whose interests lie more in linguistics, especially Nahuatlan linguistics, than in the history which is sometimes accessible only through such studies, had his attention first directed toward Huemac when H. J. Spinden, on learning that he was able to read Aztec, suggested that he translate a hitherto untranslated scrap of ancient manuscript that appeared to deal with the Toltecs. A full account of this translation is now in preparation for publication.[1] Suffice it to say that this ancient text made mention of Huemac, and that for information to be collated therewith reference was had to the "Annals of Quauhtitlan." This Aztec

[1] To be published in the Proceedings of the Twenty-Third Session of the International Congress of Americanists, as a paper read before the Congress at its twenty-third session at New York, Sept. 17–22, 1928, entitled "An Aztec Account of the Period of the Toltec Decline."

document had already been published in the *Anales del Museo Nacional de México*, Tomo 3, printed in 1886, accompanied by two Spanish translations, the earlier one by Faustino Galicia Chimalpopoca, and a later one by Gumesindo Mendoza and Felipe Sánchez Solís. The Aztec MS had once been, according to one account, in the library of the College of San Gregorio; according to another, in that of the College of San Pedro y San Pablo. Both accounts agree that it got lost at the time of the expulsion of the Jesuits and after various vicissitudes turned up again and was placed in the library of the National Museum of Mexico, where presumably it still reposes. The name "Annals of Quauhtitlan" was given it by José F. Ramírez, Curator of the National Museum, because it seemed to be the work of an annalist who was mainly concerned with the chronicles of that city but whose records took in other places and went back to the time of the Toltecs. Some notes on these annals have been made by Spinden, looking toward reduction of the Aztec dates therein to the Christian era.

No translation from the Aztec text directly into English had ever been made. The writer set out to make such a translation, not indeed of the entire Annals, but of the portions most significant for the history of the Toltec period. Now the translation of ancient Aztec MSS, written as they are in cramped, crowded, and antique minuscules, beset with flourishes, unpunctuated, abounding in abbreviations, with words run together and phrases spelled by ear, is almost as much a problem in palaeography as in linguistics. It soon became evident that, although I was dealing with a printed text and not a MS, I had to face a problem of this sort. The printed version represented a corrupted text or a poorly written one, so that a necessary part of translation was correcting this text, restoring insofar as possible the probable intended original, and setting up this restored text in a modern manner, with the aid which punctuation, hyphenation, and proper spacing give toward exposing the analysis and syntax, so that the text could be readily confronted and compared with its translation.

Fortunately most of the errors in the printed text were of the

crudest sort, absurdly obvious. A study of the types of mistake represented in them proved helpful in the clearing up of subtler difficulties. To be sure, such textual criticism ought to be done direct from the MS wherever possible. But here it was impossible. Moreover, a poorly written MS cannot relieve us of the necessity of inductively piecing together probabilities. On the whole, the problem did not appear difficult enough to require the aid of the MS, being mainly a matter of correcting obvious errors. In the notes to the translation I give the exact text of the printed version in the *Anales del Museo Nacional* wherever it shows any material difference from my corrected version, together with what would appear to be the correct form and remarks where called for. Most of the corrections will be self-explanatory to Nahuatl scholars.

The result of this process of criticism and translation was a rendering that continually differed on minor points and sometimes on major ones from those of my two predecessors in the field. But as these again differed from each other, and as I have made mine more close and literal than theirs, with a view to having it correspond line for line with the Aztec, I feel that the rendering here presented is the most authentic to date.

The first date in the Annals is a Ce Acatl or One Reed year. The backward count makes this 635 A.D. It is mentioned as the year when the Chichimecs left Chicomoztoc or Seven Caves and when the year-count, the day-count, and the count by twenties were carefully done by Oxomoco, an old man, and Cipactonal, an old woman. Later on the text says that the Chichimecs suffered greatly for "*in caxtol-poal xihuitl ipan ei-poalli on naui*," "fifteen-score years upon three-score and four," 364 years, before they reached the city of Quauhtitlan in Ce Acatl, A.D. 687. If these "sufferings" mean their experiences since leaving Chicomoztoc the departure therefrom is pushed back to 323 A.D. With the year Ce Tochtli or One Rabbit, A.D. 726, the Toltecs are first mentioned; their year-count begins with this year, with this year also it is considered that four Suns or ages of the world have been completed, and the fifth age known as the Ollin age begins. The annalist here digresses; he recalls that the creation of the world

was supposed to have begun in the year One Rabbit and ended on "the day of Quetzalcoatl," the day Seven Wind.[2] This is the first mention of Quetzalcoatl in the Annals. The annalist then lists the five Suns, called the Water, Jaguar, Rain, Wind, and Ollin Suns, with remarks on each, and returns to his chronicle.

In the year One Flint, 752, the Toltecs set up a king, Mixcoamazatzin, who began the Toltec kingdom. In Ce Acatl, 843, Quetzalcoatl is born, and the annalist applies to him the designation of "Ce Acatl Quetzalcoatl." The annals then deal at some length with the life of Quetzalcoatl, interrupting the account here and there with brief notices of the local affairs of Quauhtitlan. In Two Rabbit Quetzalcoatl goes to a place called Tollantzinco and spends four years in building operations, erecting the famous building called the *huapalcalli* and a bridge that led to the Huastec country. In Five House the Toltec detain him in the country and make him their king and priest.

The year Two Reed "contained a report" (or so I tentatively translate) that *Quetzalcoatl to-piltzin* (our lord) had died, and yet the annals say that in this same year *to-piltzin in ce-acatl Quetzalcoatl* built a fourfold group of buildings where he and others prayed and fasted, conducted skilled work in precious stones and held religious rites. Some note is made of the nature of their cult; it was of a celestial and astronomical character, with stellar and solar deities and sacrifices of snakes, birds, and butterflies. Emphasis is placed on Quetzalcoatl's knowledge of the Ommeyocan, the nine celestial intervals (*Chiconauh-nepanihuan*) and his ability to converse with heavenly beings. His wealth also is recounted, and his beginning to build a great temple with "serpent-pillars" (*coa-tlaquetzalli*), which he never finished.

And now there enters the narrative the class of beings called *tlatlacatecolo* or demons,[3] who from now will play an important part

[2] Or, the day Seven Reed. The printed text of the Annals says "7 ecatl," which would ordinarily be taken to mean "7 eecatl," or 7 Wind, the common modern spelling being "ehecatl"; but which again might be an error for "7 acatl," or 7 Reed. It would seem that it is more likely to have been the day 7 Acatl that was associated with Quetzalcoatl. Spinden, in his recent "Maya Inscriptions Dealing with Venus and the Moon," p. 56, cites the Codex Telleriano-Remensis in support of this view.

[3] *tlacatecolotl*, demon, devil; plural *tlacatecolome* or *tlatlacatecolo*.

therein. This term, in the Annals of Quauhtitlan, seems to be used in two meanings that sometimes blend. *First*, a class of gods, or beings that later were worshipped as gods, of whom the most important seems to be Tezcatlipoca, whose cult is of that ferocious type with its insistence on human sacrifice that we are wont to think of as typically Aztec, and is in contest with the milder religion represented by Quetzalcoatl. *Second*, various peoples, evidently barbarous tribes, who are making inroads into the Toltec country, who are somehow closely related to the *tlatlacatecolo* of the first sort, or demon-gods, and evidently adhere to their cult. The demon-gods try to win over Quetzalcoatl to the practice of human sacrifice, but Quetzalcoatl refuses, for, says the chronicle "he greatly loved his subjects," and so his sacrifices continue to be of snakes, birds, and butterflies. The *tlatlacatecolo* then adopt a policy of mockery and ridicule with the object of tormenting Quetzalcoatl and eventually forcing him to flee, in which they at last succeed. The narrative is here followed by a short year-count leading up to another Ce Acatl, in which is recorded the death of Quetzalcoatl at Tlillan Tlapallan and his succession on the throne of Tollan by Matlacxochitl. Then the narrative goes back and relates the events leading up to his death, with the trickery of Tezcatlipoca narrated at length and in detail; also the circumstances of his death, which is by suicide on a burning pyre, of his ashes rising, of the entrance of his soul into heaven and his return as the morning-star *Tlauizcalpan teuctli*.

Against this background Huemac appears. His birth is not mentioned, but his accession to the throne of Tollan occurs in a year Nine Rabbit, which by the backward year-count of the annals from a known date would seem to be 994 A.D. but which is probably 1098 A.D.[4] in line with Spinden's statement that two

[4] Or still more probably 1150 A.D. allowing for still a third interpolated cycle. The writer reached this conclusion after a later conference with Spinden and after studying his recently published "Maya Inscriptions Dealing with Venus and the Moon." This assumption accords well with the events related in the Annals. The important era-year 1 Tecpatl, mentioned by Spinden on page 55 of the aforesaid work is on this assumption the 1 Tecpatl which occurs sixteen years after Huemac's elevation to the throne and is passed over in the Annals without notice. The first notice after this year is that of 7 Tochtli, "therein was instituted the sacrifice of the god-impersona-

cycles were interpolated into the Annals subsequent or previous to this date. But little space is spent on historical narration between the death of Quetzalcoatl and the accession of Huemac, though a count of ninety-nine years is recorded in that interval. I believe it is Spinden's view that the events recorded of Huemac and of Quetzalcoatl, insofar as they are historical, relate to one and the same person, and that they happened about the time assigned in the Annals to Huemac. It would seem that in the disorder of the subsequent times, that tendency which resulted in deifying him also resulted in forgetting a good deal of the purely human side of him, whereas some picture of this human side of him may have been preserved by the very ones who would not accept him as a god. Along with deification may have gone the projection of his figure back into a more legendary period, a time which was more distinctly a time when the gods walked among men. Perhaps his figure may have fused into and transfigured that of some older Feathered-Serpent god. And if the figure of the hero-god is decked in all the trappings of legend, resplendent with the gold and silver, the turquoise and chalchihuitl and precious birds of Nahua myth, if it is in short too bright, so also is that of King Huemac too dark. It is like a mass of bitter dregs from which everything pleasant or favorable has been strained away. We read of no building operations, no conquests, no achievements—of nothing but reverses, defections, backslidings and terrible deeds—and between the lines of a heroic but losing struggle to save something, some last remnant, of a country and a religion. This tale of Huemac is stark tragedy.

---

tor." The later 1 Tecpatl, when the Toltec nation was going to pieces and about which the Annals have so much to say, is then the year 1220 A.D. This again accords with the events related. This appears to be the 1 Tecpatl year recorded in the above-mentioned scrap of Toltec historical MS translated by the writer.

Around this time the Mayan Books of Chilam Balam, especially that of Mani (v. *The Maya Chronicles*, D. G. Brinton), record numerous Nahua names in but slightly altered Maya form; e.g., in 1159 by Brinton's figuring, Chichen Itza was depopulated by warriors bearing such Nahua names as Cinteotl (Ah Zinteyut Chan), Tzontecontli, Tlaxcalli, Pantemitl, Itzcoatl, and Cacaltecatl.

Note. The spelling of Aztec used herein is that of Rémi Siméon's "Dictionnaire de la Langue Nahuatl," except that the character ç is not used, being replaced by z.

Corrected Aztec Text[5]	*Translation*
1. 9 tochtli.	Nine Rabbit.
2. In ipan in 9 tochtli, ipan mo-	In Nine Rabbit, therein died
3. miquili	
4. in Tollan tlatoani Tlilcoatzin;	Tollan's King, Tlilcoatzin;
5. auh niman mo-tlatoca-tlali in	and thenwas enthroned Huemac.
6. Huemac.	
7. I-tlatoca-toca on mo-chiuh	His royal fame was achieved on
8. Atecpanecatl,	the Atecpaneca,[6]
9. ca cenca miec in toloca	for very much history
10. cecni amoxpan mo-caquiz.	elsewhere in books will be heard of
11.	him.
12. Ca in iquac mo-tlatoca-tlali,	For upon his being made king,
13. quinno iquac mo-cihuauati	afterward when he married
14. conmo-cihuauati i-toca Coacueye.	he took a wife named Coacueye.
15. Mo-cihua-cuepque in qu-izcali	The women had turned and revived
16. tlacatecolotl	(the cult of) the demon-gods
17.	
18. oncan i-tocayocan Coacueyecan,	there in her namesake-place,
19.	Coacueyecan,
20. oncan chanecatca in i-toca	where abode the Coacue-named one,
21. Coacue ce,	
22. ciyacatl mo-chiuh inic patlauac	represented with sleeves spread out
23. i-cuitlapan.	in back.
24. Auh in omo-chiuh inin,	And these things being done,
25. niman c-ana-to in Xicococ	then he went and got one who was a
26. tlanamacac catca,	merchant of Xicoco,
27. in i-toca Quauhtli.	by the name of Quauhtli.
28. Niman in ya yeuatl	Then, as this one proceeded
29. i-petlapan i-cpalpan on mo-	to have Quetzalcoatl set up on car-
30. tlali-co in Quetzalcoatl,	pet and throne,
31. ye yeuatl conm-ixiptlayoti	therefore this same one was made
32. Quetzalcoatl.	the representative of Quetzalcoatl.
33. On mo-chihua-co in Tollan	It came to pass that in Tollan
34. yeuatl teopixcati-co con-patlac	Huemac replaced in the priesthood
35. in Huemac	that one,
36. aca a-Quetzalcoatia,	any one, who did not Quetzalcoatl-
	ize (adopt or observe the Quetzal-
	coatl cult or religion),

[5] Based on pp. 24–29 of Anales de Cuauhtitlan, compiladas por J. F. Ramírez, Anales del Museo Nacional de México, 3, Appendix, 1885.

[6] Perhaps the name of a tribe, or it may mean ("those not of the palace").

25.	in iquac ic am-auilti-to, ic amo cayaua-to in-cihua tlatlacatecolo,	whereupon the women of the barbarians ("demons") could not go forth to sport and jest,
26.	in tech-acic yeuantin in tlacatecolotl yaotl.	which brought upon us those barbarians as an enemy.
27.	Ihui, in m-itoa, Tezcatlipoca,	There went forth, it is said, Tezcatlipoca,
28.	in Tzapotlan nenca;	who in Tzapotlan was idling;
29.	ompa ualla inic qu-iztlacaui-co Huemac	thence he came to seduce Huemac
30.	in omo-cihua-cuepque in tech-acic.	because women had been turned away upon arriving among us.
31.	Niman ye qui-cauh in Quetzalcoatia,	Then whosoever desisted from worshipping according to Quetzalcoatl,
32.	om-ito, ic ye con-patlac in Quauhtli.	it was said, thereupon he replaced that one by Quauhtli.
33.	10 acatl, 11 tecpatl, 12 calli, 13 tochtli, 1 a, 2 te, 3 c, 4 to, 5 a, 6 te, 7 c, 8 to, 9 a, 10 te, 11 c, 12 to, 13 a, lte, 2 c, 3 to, 4 a, 5 te, 6 c, 7 tochtli.	Twenty-three years pass, and the twenty-fourth is Seven Rabbit.
34.	Ipan tzintic in tlaca-teteuh mictiliztli.	Therein was instituted the sacrifice of the god-impersonator.[7]
35.	Ipan in mo-chiuh chicome tochtli,	As for what took place in Seven Rabbit,
36.	ipan in mo-chiuh in	what took place therein was
37.	cenca uei mayanaliztli, in m-itoa	a very great famine, which, it is said,
38.	mo-chicon-tochilique in Tolteca.	pressed seven times upon the Toltecs.
39.	Catca chicon-xiuh mayanaliztli,	It was a seven-year famine,
40.	ic oncani in cenca ye tla-tolinia, ye tla-tlatia mayanaliztli,	so that, as undergoers whom the famine so greatly afflicted, so consumed,
41.	niman icancan in tlatlacatecolo	the barbarians then arose
41.	quim-itlanque in i-tlazo-pilhuan,	and made petition with their own children
43.	temoa ompa quin-caua-to,	seeking further to be rid of them,
44.	in Xochiquetzalli Apan ihuan Huitzcoc ihuan Xicoc,	at Xochiquetzalli Apan and Huitzco and Xico,
45.	inic ica mo-xtlaua-to pipiltzintin.	to pay with them the sacrifice of little children.
46.	Yancuican ompa tzintic	An innovation was thence instituted
47.	in tlaca-teteuh mictiliztli	the sacrifice of the god-impersonator
48.	in omo-chiuhti-manca.	which was performed on every hand

[7] The well-known Mexican rite.

49. 8 acatl, 9 te, 10 c, 11 to, 12 acatl. Four years pass, and the fifth is Twelve Reed.
50. Ipan in mo-miquili in tlatoani Therein died the chief
51. Quauhtitlan, in toca Tzihuac-papalotzin; at Quauhtitlan, he named Tzihuac-papalotzin;
52. 42 in tlatocatiti-catca. forty-two years had he been governing.
53. 13 tecpatl. Thirteen Flint.
54. Ipan in xihuitl in mo-tlatoca-tlali in cihuapilli In which year it was that a woman was made chief
55. in Quauhtitlan qui-pachoaya altepetl. so that she ruled the city of Quauhtitlan,
56. in i-toca Iztacxilotzin. her name being Iztacxilotzin.
57. Ompa i-tlalicatqui i-zaca-cal i-zaca-cal (dittogr.) manca From there her company of settlers spread out its straw huts
58. in izqui itlan atla ompa itlan. in many places where there was water.
59. Catca miequintin cihuapipiltin There were many noblewomen
60. in quim-mauiztiliaya whom they much respected
61. ica in Chichimeca in quimo-cuitlauiaya. with Chichimecs who took care of them.
62. I calli, 2 to, 3 a, 4 te, 5 c, 6 to, 7 a, 8 te, 9 c, 10 to, 11 acatl. Ten years pass and the eleventh is Eleven Reed.
63. Ipan in xihuitl in mo-miquili in cihuapilli Iztacxilotzin, In which year it was that the lady Iztacxilotzin died,
64. matlac xihuitl on ce in tlatocat. having governed ten years and one.
65. Auh niman con-patlac onmo-tlatoca-tlali Eztlaquencatzin. And then Eztlaquencatzin was made chief in her place.
66. Oncan in Techichco yancui-can qui-man i-zaca-cal, in i-tec-pan-cal; There in Techichco he laid out anew his palace with its straw huts;
67. oncan cal tzinti there he established his house
68. inic oncan manca tlatoca-calli. so that there was spread out there a royal estate.
69. 12 tecpatl, 13 c, 1 to, 2 a, 3 te, 4 c, 5 to, 6 a, 7 te, 8 c, 9 to, 10 a, 11 te, 12 c, 13 to, 1 acatl. Fifteen years pass and the sixteenth is One Reed.
70. Ipan in quizque Xicco in Chalca in tla-tzintiani; In which the founders of Chalca left Xicco;
71. Acapol, i-cihuauh Tetzcotzin, in-pilhuan Chalcotzin, Chalcapol. Acapol, his wife Tetzcotzin, and their children Chalcotzin and Chalcapol.
72. 2 tecpatl, 3 c, 4 to, 5 a, 6 te, 7 c, 8 tochtli. Six years pass and the seventh is Eight Rabbit.
73. Ipan in xihuitl in cenca miec tetzauitl In which year it was that very many awful things
74. mo-chiuhti-manca Tollan, were done all around in Tollan,

75.	auh no iquac ipan in xihuitl	and also in the time of which year it was
76.	oncan aci-co in tlatlacatecolo,	that the barbarians came to arrive there,
77.	in m-itoaya Ixcuiname cihua,	they of the so-called "Ixcuina women,"
78.	auh in yuhca in-tlatol huehuetque con-itoa:	and of whom thus the old men's story goes:
79.	in ic uallaque Cuextlampa in quiza-co,	that as they came from the Huastec land which they were leaving,
80.	auh in ompa m-itoa Cuextecatl in chocaya;	and that as they spoke, over there, to the weeping Huastecs;
81.	in oncan quin-nonotzque in-malhuan	there they informed their captives
82.	quim-acique Cuextlanca ica yoliuh tlamachtique, in quim-ilhuique;	they had seized from Huastec land where they used to live happily, saying to them;
83.	"Ca ye ti-ui in Tollan amoca	"For already we journey to Tollan with you
84.	tlaltech t-acizque;	to attain unto the country;[8]
85.	amoca t-ilhui-chihuazque,	we shall make holiday with you,
86.	ca ayaic tlaca calhuia teuantin;	yet never by daily feasting, not we!
87.	tic-peualti-tihue tamech-min-azque!"	—we are preparing to shoot arrows into you!"
88.	In oqui-cacque in-malhuan,	As their captives heard it,
89.	niman ic chocaque, tlaocoxque;	then they wept bitterly over it;
90.	oncan tzintic inin tla-cacaliliztli	there commenced those arrow-slaughters
91.	inic ilhui-chihuitiloya in Ix-cuiname,	with which festivals were celebrated by the Ixcuinas,
92.	in iquac m-itoaya izcali.	at which time, it is said, they revived them.
93.	9 acatl.	Nine Reed.
94.	Ipan in neci-co Tollan in Ix-cuiname,	Therein it was that the Ixcuinas first appeared in Tollan,
95.	ica tlaltech aci-co in in-malhuan omentin,	reaching the country with two of their captives,
96.	in quin-cacalique.	whom they slew with arrows.
97.	Auh in tlatlacatecolo in cihua	And if the women were barbarous
98.	diablome in im-oquichhuan catca	their men were *diablos*
99.	in im-malhuan Cuexteca;	to their Huastec captives;
100.	oncan yancuican tzintic	there commenced anew
101.	in tla-cacaliliztli.	the arrow-slaughter.

[8] This is the passage which Brasseur de Bourbourg thought meant "we are going to couple the earth with you," and has since been cited in support of an alleged rite of "coupling the earth." But *tlaltech aci* is only a slight variant of an extremely common expression for arriving at a place, *tlal aci*.

102.	10 tecpatl, 11 c, 12 to, 13 acatl.	Three years pass and the fourth is Thirteen Reed.
103.	In iquac miec mo-chiuhti-catca tetzauitl in Tollan;	When many awful things were being done in Tollan;
104.	niman ompa peuh in yaoyotl	then and thenceforth began the war
105.	in qui-tzinti in tlacatecolotl yaotl;	that the barbarian enemy had started,
106.	ompa in m-itoa Nextlalpan	yonder in Nextlalpan, they say,
107.	quim-ixnamicque in Tolteca.	they fought the Toltecs.
108.	Auh in otla-ma-to,	And as capturing went on,
109.	niman no oncan peuh in tlaca-mictiliztli	then and there began a human sacrifice
101.	in quin-mictique im-malhuan Tolteca.	in which the Toltecs killed their captives.
111.	In tzalan, in nepantla,	While in the meantime, in the interval,
112.	izati-nenca in tlacatecolotl yaotl,	the barbarian enemy lived on the alert,
113.	inic uel oncan queni	so that everywhere, indeed,
114.	tlauiltiti-nenca inic tlaca mictizque.	they went about stained red to kill men.
115.	Auh niman oncan tzintic	And then and there was instituted
116.	on peualti in tlaca xipeualiztli.	and begun the custom of flaying people.
117.	Iquac in on ica manaya Texcalpan,	At a time when they were ranged about by Texcalpan,
118.	oncan yancuican;	there a new thing happened;
119.	cetlacatl cihuatl Otomitl	a certain Otomi woman
120.	tla-cemanaya in atoyac;	was proceeding to the river;
121.	oncan con-an, in qui-xipeuh,	there someone caught her and flayed her
122.	niman con-aqui in euatl,	then put on the skin—
123.	in i-toca Xiuhcozcatl, Tolteca.	—he was a Toltec called Xiuhcozcatl.
124.	Yancuican oncan tzintic	The innovation was there founded
125.	in to-tec euatl qui-m-aquiaya;	of dressing in the inside of some one's skin;
126.	quin uel mochi oncan o-tzintic	after it was quite thoroughly instituted there
127.	in ixquich tlaca mictiliztli o-catca.	complete human sacrifice existed.
128.	Ca m-itoa mo-teneua	For it is said and related
129.	ca in oqui-mac, in oqui-matia-yani,	that when one took a captive, or was intending to do so,
130.	in achtopa Quetzalcoatl catca,	formerly when Quetzalcoatl lived
131.	in mo-tocayotia "ce acatl,"	who bore the title of "One Reed"[9]

[9] The year of Quetzalcoatl's birth, and a title given him elsewhere in the Annals of Quauhtitlan.

132.	zanniman aye qui-nec in tlaca mictiliztli.	then no one wanted human sacrifice.
133.	Ca quin oncan in ipan in iquac	It is after that, in the time when
134.	tlatocatiti-catca Huemac	Huemac was reigning
135.	mochi tzintic in omo-chihuaya	that all began to do
136.	qui-tzintique in tlacatecolome,	what the barbarians had started,
137.	tel cecni om-amayoti om-icuilo	as moreover elsewhere is charted and written
138.	ompa mo-caquiz.	and further on will be heard.
139.	Ce tecpatl.	One Flint.
140.	Ipan in xihuitl xitinque in Tolteca catca;	In which year the Toltec nation was going to pieces;
141.	ipan mo-chiuh in Huemac iquac tlatocatiya.	it befell Huemac while he was ruling.
142.	Auh inic yaque, inic olin pequiza-co Cincoc.	And thereupon they went, thereupon they dashed away hurriedly to Cinco.
143.	Auh in oncan Cincoc, oncan qui-micti i-tlaca-teteuh in Huemac;	And while at Cinco, there Huemac slew his god-impersonator;
144.	ic mo-xtlauh i-toca catca Cecoatl.	with him sacrifice was paid to the one called Cecoatl.
145.	Auh oncan oztoc calaquiz nequiya	And there he sought to enter a cave
146.	in oncan otlipan Tlamazcatzinco,	while on the road to Tlamazcatzinco,
147.	amo uelit.	but could not.
148.	Niman ualleuac quiza-co oncan	So then he came out and departed to the place where
149.	m-ixiuh i-cihuauh in Huemac	Huemac's wife gave birth to
150.	i-toca Quauhnene;	him named Quauhnene;
151.	itocayotilo in axcan Quauhnenec.	it (this place) is now called Quauhnenec.
152.	Auh niman ualleuac quiza-co Teocompa,	And then he came forth and departed for Teocompa (place of the giant barrel-cactus, *Echinocactus* sp.)
153.	oncan icpac in teocomitl	where around the giant cactus
154.	mo-quetz in tlacatecolotl yaotl.	the barbarian enemy had taken their stand.
155.	Oncan quin-cennotz in i-cnihuan, quim-ilhui,	There he called together his allies, saying to them,
156.	"Ximo-tlalican, in an no-cnihuan,	"Stay, O my friends,
157.	ma ceuiani in Tolteca;	let Toltecs be calm;
158.	amo an-yazque in an no-cnihuan."	you will not go, O my friends."
159.	Auh in onca quin-centlali.	And whom he had he assembled.

160. In ic 1 Icnotlacatl, ic 2 Tzinmacatl, ic 3 Acxoquauitli, ic 4 Tzonquaye, ic 5 Xiuhcozcatl, ic 6 Ozomateuhtli, ic 7 Tlachquiyauitl-Teuhtli, ic 8 Huetl, ic 9 Tecolteuhtli, ic 10 Quauhtli, ic 11 Aztaxoch, ic 12 Oztamamal, ic 13 Icnotlacatlinan,

First Icnotlacatl, second Tzinmacatl, etc.

(Note that Xiuhcozcatl and Quauhtli have been mentioned before.)

161. ihuan milli quin-tiuh,
162. in zan mo-tolinia i-cnihuan tlacatecolo,
163. in oncan quin-centlali ueicampan.
164. Auh in o-yaque Tolteca,
165. niman quim-on-ɔuiti in i-cnihuan tlacatecolotl
166. ompa qui-tlali-co in Xaltocan.
167. Quim-ilhui in Icnotlacatl
168. ihuan mochintin amo amatlamatizque:
169. "Xic-ilnamiquican inic otitlatequipanoque Tollan,
170. yuh on qui-chiuhtiazque mochipan.
171. Cenca teuatl, in ti Icnotlacatl,
172. ma t-a-tlama (t).
173. Intla x-a-tlamatican,
174. namech-quequeloz, namechpopoloz.
175. Maxtla, in Tolteca tepec chanecatca,
176. omentini-chpoc-pochhuan, Quetzalquen, Quetzalxilotl;
177. chalchiuh tepetlacalco in quinpiaya.
178. Oncan ic quin-cocoa pilhuantin;
179. o-ontenque in quin-tlacatilique
180. in-ixiptlauan in tlaquame.
181. Auh noyuh nic-quequelo
187. in Oztotempan tlapiaya Quauhtliztoc
183. ihuan in Atzompan tlapiaya Quauhtlica;
184. neuatl niquin-popolo."

and their vassals came after,
merely harassing the allies of the barbarian,
which he (the barbarian) had assembled there in the highlands.
And as the Toltecs proceeded,
then the barbarian roused his allies

and forthwith beset Xaltocan.
He (Huemac) said to Icnotlacatl
and to all without book-wisdom:

"Remember how we have worked for Tollan,
as one should always do.

As for thee, O Icnotlacatl,
may it be that thou hast not dealt deceitfully.
And if ye (O people) be not wise,
I shall come to shame in you, I shall utterly lose you.
Behold Maxtla, who dwelt in the Toltec mountains,
and his two maiden daughters, Quetzalquen and Quetzalxilotl;
in a jewelled cloister he kept them.

Yet there they sickened with childbirth;
they came to full term and brought forth
the likenesses of *tlaquatls* (a certain little animal).
And even so did I come to shame by
the way Quauhtliztoc kept Oztotempan
and Quauhtlica kept Atzompan;

even I have utterly lost them."

185.	Auh in oquim-on-euiti i-cnihuan tlacatecolotl yaotl in ompa Xaltocan,	And as the barbarian enemy roused up his allies there at Xaltocan,
186.	inic quim-on-tlali-to,	thereupon he stationed them,
187.	tlanican tlatepotzco quim-on-tecac in ompa Xaltocan.	he laid them in the low ground there behind Xaltocan.
188.	Auh in Tolteca niman yaque quiza-to Coatliyopan,	And the Toltecs then proceeded to leave Coatliyopan,
189.	quiza-to Atepocatlalpan, quiza-to Tepetlayacac,	to leave Atepocatlalpan, to leave Tepetlayacac,
190.	quiza-to ueue Quauhtitlan,	to leave Old Quauhtitlan,
191.	oc oncan con-chixque in Tamazolac chanecatca,	where furthermore they waited for one living in Tamazolac
192.	in oncan tlapiaya, in i-toca Atonal.	who kept the place there, and whose name was Atonal.
193.	Niman no teuan quin-uicac in im-maceualhuan.	Then also their servants (or, subjects) accompanied them.
194.	Niman om-euaque in Tolteca quiza-to Nepopoalco, Temacpalco, Acatitlan, Tenamitliyacac, Azcapotzalco, Tetlolincan,	Then the Toltecs arose and departed from Nepopoalco, Temapalco, Acatitlan, Tenamitliyacac, Azcapotzalco, and Tetlolincan
195.	iquac tlatocati Tzihuactlatonac in oncan,	while Tzihuactlatonac ruled there,
196.	oncan quin-cauhque omentin Tolteca ueuetque,	where they left two Toltec elders,
197.	Xochiololtzin, Coyotzin;	Xochiololtzin and Coyotzin;
198.	teocuitla comalli con-macaque in tlatoani	a golden platter they gave to the local chief
199.	inic oncan itlan omo-tlalique.	so that they could settle down there.
200.	Niman yaque in Tolteca quiza-to Chapoltepec, Huitzilopochco, Colhuacan,	Then the Toltecs proceeded to leave Chapoltepec, Huitzilopochco, and Colhuacan,
201.	quiza-to Tlapechhuacan, Quauhtenco.	to leave Tlapechhuacan and Quauhtenco.
202.	Auh in o-yaque o-calacque altepetl	And as they went on and entered cities
203.	ipan cequintin mo-tlalique;	they settled in some;
204.	Cholollan, Teohuacan, Cozcatlan, Nonoalco, Teotliillan, Coaixtlauacan, Tamazolac, Copilco, Topillan, Ayotlan, Mazatlan,	Cholula, Teohuacan (Teotihuacan?) Cozcatlan, Nonoalco, Teotilillan, Coaixtlauacan, Tamazolac, Copilco, Topillan, Ayotlan, Mazatlan,
205.	inic nohuian Anauaca tlalli	so that all over the Anahuac land
206.	ipan mo-tlali-to in axcan ompa onocque.	they settled in places that still lie there.
207.	Auh in ipan ce tecpatl no iquac	And in One Flint was likewise the time when

208.	cem-ohui qui-tocaque in Colhuaque,	the Colhuacans followed him (Huemac?) all the way,
209.	auh tla-yacantiya in-tlatocauh i-toca Nauhyotzin.	and their chief named Nauhyotzin was the leader.
210.	2 calli, 3 to, 4 a, 5 te, 6 c, 7 tochtli.	Five years pass and the sixth is Seven Rabbit.
211.	Ipan in mo-micti in Huemac	In which Huemac killed himself
212.	in oncan Chapoltepec cencalco.	while with a family of Chapoltepec.
213.	Ipan in 7 tochtli xihuitl,	In the year Seven Rabbit,
214.	ipan tlami-co in in-xiuh Tolteca.	therein the years of the Toltecs came to an end.
215.	Chicon-xihuitl in nohuian quiztinemi-to	For seven years, everywhere they went on emigrating
216.	in Nauacan (?) tepeuacan	from the Nahua (?) land of origin
217.	inic ompa mo-tecac in mo-tlatlali-to.	so that further on they laid themselves down to become established.
218.	Inic onoca Tolteca &	So that the Toltecs were laid low . . . . (evidently some portion is missing here)
219.	. . . . xihuitl ipan CCCIX.	. . . . years in 309.
220.	Auh in ipan 7 tochtli xihuitl,	And in the year Seven Rabbit,
221.	ipan in yeuatl Huemac mo-micti-co,	therein Huemac himself came to kill himself,
222.	mo-quechm(at)elonioncan motl-auelpolo,	strangling himself there in his despair,
223.	in oncan Chapoltepec oztoc.	there in a cave of Chapoltepec.
224.	Achtopa chocac, tlaocox,	First he wept in bitterness of heart
225.	in iquac aocaque quim-itta Tolteca,	as he saw that the Toltecs were no more,
226.	in o icampa tlanque.	that at last they had ended.
227.	Niman omo-micti.	Then he killed himself.

NOTES

Line	Printed text published in Anales del Museo Nacional.	Revised text showing correct or probable intended form, and remarks.
7.	mocaquez.	mo-caquiz.
10.	comnocihuahuati.	conmo-cihuauati.
11.	mocihuaquetzqui.	mo-cihua-cuepque. Rendered probable by the fact that this unusual compound occurs again. The second time it was correctly copied, the first appearance was corrupted. The influential error was probably the mistaking of the MS *p* for *tz*, which as written in the old MSS, often with *t* uncrossed, resembles a *p*. Then under the impression that the stem intended was *quetz* the copyist may have changed a written *cu* to *qu*.
11–12	quizcalli tlacatecolt.	qu-izcali tlacatecolotl.
15.	yn icpatlahuac.	inic patlauac.
16.	omochiuhnin.	omo-chiuh inin ('nin).

17. Tlenamacac. tlanamacac.

19–20. niayehuatl ypetlapan ic palpan onmotlallico. in ('n) ya yeuatl i-petlapan i-cpalpan on mo-tlali-co.

23–24. yn huemacacca Quetzalcoatia. in Huemac aca a-Quetzalcoatia. Here *a* has been mistaken for *c* (a common error) so that *acaa* has become *acca*. We have here a denominative verb from a proper name,—"Quetzalcoatl-ize," the general sense of which can be gathered from the context.

31. yequicahu. ye qui-cauh. *Ye* is here the pronoun he, that one, he who; not the adverb so, already.

34. tlacatetemictiliztli. tlaca-teteuh mictiliztli. This first appearance of the word is corrupted, but when it recurs it is spelled correctly—*"tlacateteuh mictilíztli."*

38. mochicontochuique. mo-chicon-tochilique. This error probably came about by mistaking *li* in the MS for *v* (*u*), often written with a flourish. The reverse mistake occurs below—*ixali* for *ixcui*. The verb is more often found reduplicated—*totochilia, urgeo, incito,* Biondelli (Sahagun).

40. yconcani. ic oncani—*nomen agentis* of *onca*, be there.

41. ycancan. icancan—probably an unusual past tense form of the irregular verb *ica*—*icac*, stand.

43. temac. temoa—*a* for *o* and *c* for *a*.

44. xochique tzalyyapan. Xochiquetzalli Apan—name of a place.

48. omochiuh timanca. omo-chiuhti-manca.

57. ytlalicatqui. i-tlalicatqui or i-tlalicatque. A collective or plural *nomen agentis* in *qui* or *que* from *tlali-ca*, probably in sense "to be settling."

57. yzcacal yçacacalmanca. i-zaca-cal manca. Dittography occurred and then the first "yçacacal" was misunderstood and corrupted.

58. yzquitlanatla. izqui itlan ('tlan) atla. The last word means place where there is water.

74. mochiuh tzimanca. mo-chiuhti-manca. Probably a flourish after *t* was mistaken for *z*.

77. yxcuinanme. Ixcuiname. Evidently a plural proper noun denoting a tribe.

80–81. ychocayau. in chocaya in ('n). *In* was often written *ỹ*, and the *tilde* sometimes got omitted.

82. Cuextlan quicayol yuh. Cuextlanca (Cuextlanc') ica yoliuh.

83–84. amocatlaltechtacizque. amoca tlaltech t-acizque. The first word means "with you," the second "to the land," the third "we shall arrive" (or, "attain").

85. amoca tiluhichihuazque. amoca t-ilhui-chihuazque. The compound verb means "make (*chihua*) holiday (*ilhui-tl*)."

86. caaya yc. ca ayaic.

86. tlacacclihua. tlaca calhuia. (*calhuia*, eat roasted maize; *tlaca-tli*, day).

90. yn yntlacacaliliztli. inin tla-cacaliliztli. From the stem seen in *tla-cacalli, "cosa flechada o asaeteada"* (Molina).

94. yxalinanme. Ixcuiname. *C* of original copied as *c*, *vi* of original as *li*.

96. quin cacalque. quin-cacalique. The verb *cacalia* from which comes *tlacacali-liz-tli*; itself from the verb-stem *caca* seen in *tla-caca-l-li*, basic meaning probably enter, penetrate, pierce.

111. yn Tzalan. in tzalan—followed by the typical accompanying synonym of Aztec literary style—*in nepantla*.

112. ycatinenca izati-nenca. *Içati*, stem of *içati-ca* "estar despierto," *içat-eua*, "despertar y levantarse de priesa" —cedilla omitted from *c*.

113–4. quenitlahuiltitinenca. queni tlauiltiti-nenca or quen ne-tlauiltiti-nenca. *Tlauiltia* here is probably the applicative corresponding to *tlauia*, *tla*, "almagrar algo," and the meaning could also be "flushed, inflamed"—"o pararse bermejo y encendido el rostro." Since the use is probably reflexive, the morphologically correct form may be that with prefix *ne-*.

120. tlacimaya. tla-cemanaya—the syllable *an* having been skipped—"continuar, o perseverar hasta el cabo."

122. yn nehuatl. in euatl—the skin.

125. quimaquiayaya. quim-aquiaya. (dittography).

129–30. ynocymac ynocymatiayan yn achto paquetzalcoatl. in oqui-mac, in oqui-matiayani 'n achtopa Quetzalcoatl.

133. Caquinoncanin. Ca quin oncan in.

135. mochitzintic. mochi tzintic.

142. ollinpequizaco. olin pe-quiza-co. *Olin* is the stem of the verb *olinia*, move, agitate, modifying the following verb *pequiza*, which is not in the dictionaries. It would seem to be the verb *quiza*, leave, go forth, compounded with the not uncommon radical element *pe*, start, spring, begin, impel, etc., imparting a sense of impetuous movement to *quiza*.

157. mazahuiyan yn Tolteca. ma ceuiani 'n Tolteca. Optative of *ceuia* be calm, quiet, etc.

161. millequintiu. milli quin-tiuh. *Quin*, after; *milli*, estate, "heredad," here used in the sense of a chief's retainers or vassals.

169. yn icoti tlatequipanoque. inic otitla-tequipanoque.

172. matatlama. ma t-a-tlama (t). Preterite 2nd pers. sing. of *tlamati*, be wise, skilled, cunning, also be deceitful, impose upon—with negative *a-* and optative particle *ma*. *A-* here negates the bad sense of *tlamati*.

173. yn tlaxatlamatican. intla x-a-tlamatican. The speaker turns from Icnotlacatl to the others and addresses them in the conditional imperative 2nd pers. plural; now using *tlamati*, though still with the negative, in the good sense. There is evidently a play on this word.

177. Chalchiuh Tepetlacalco. chalchiuh tepetlacalco. I translate as a common noun somewhat figuratively used—a "jewelled" retreat in which the two girls were secluded.

179. oonteme. o-ontenque. Preterite of *temi*, be full,

complete, etc., with the perfective *on*. Either written *oontence* (*c* for modern *qu* is common) and then *nc* taken for *m*, or *n* omitted and *nq* taken for *m* with flourish, or written *temc* and *c* taken for *e*.

179–80. quin tlacatilique nixiptlahuan. quin-tlacatilique 'n-ixiptlauan, or 'ni-'xiptlauan.

187. tlanican Tlatepotzco quimontecao. tlanican tla-tepotzco quim-on-tecac.

188. coatly yopan. Coatliyopan—a place.

198. Teociutlacomalli. teocuitla comalli.

205. anahuacatlali. Anauaca tlalli.

208. ceymohui. cem-ohui—"all the way."

212. cincalco. cencalco—*cencalli*, family.

216 yn Ahuacan tepehuacan. in Nauacan te-peuacan—the last from *peua*, begin.

217. yn iccompa motecao. inic ompa mo-tecac.

218. yn iconocatoteca. inic onoca Tolteca—the text is evidently fragmentary for a space here.

221. temacmomictico. Huemac (in the original text probably written *vemac*) mo-micti-co.

222. moquechmeloni. mo-quechmateloni. Two letters were skipped. Present participle reflexive of *quechmateloa*.

225. aocuque. Probably a plural form, *aocaque*, of *aocac*, "no esta ya aqui."

226. oycampa tlanque. o icampa tlanque. The particle of the perfect tense *o* separated from the verb; adverb *icampa*, behind, after, in the sense of "after everything, at the end, at last."

320 Wolcott Hill Road,
Wethersfield, Connecticut

THE SOCIÉTÉ CONGO OF THE ILE Á GONAVE

By ROBERT BURNETT HALL

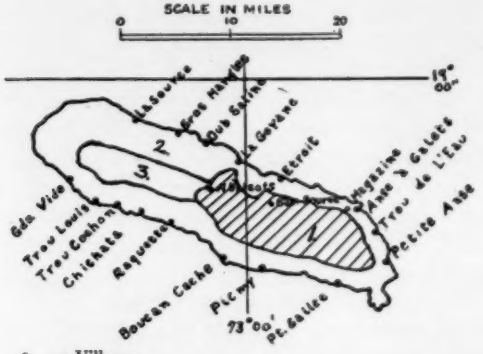
Introduction

IN ORDER to understand any aspect of Haitian life, it is necessary to remember the diversified origins of its culture. The chief elements concerned are African, French, and American Indian. The present population of the republic is composed of about 90% pure Negro and 10% mulatto, with French blood the most important white strain in the mixtures. This Negro stock was drawn from Gambia southward on the west coast of Africa and up the east coast to Mozambique and Zanzibar. There are represented, then, in Haiti, the cultural background and physical characteristics of many African peoples. The period of the French colony accounts for the French "paotis" of the people, a certain French tradition, a veneer of Roman Catholicism, and marked changes in the material culture. The amalgamation of the slaves into a homogeneous mass was carried on by arbitrary means under the French masters and has continued by optional selection since. The Indians left but little of their blood, due to the efficient methods of extermination employed by the Spaniards. They did, however, leave the chief crops and some of the agricultural practices of today.

The Ile á Gonave offers an excellent field of study to those interested in primitive society or in African inheritances among New World Negroes. Two natural features distinguish this island from the rest of the Republic of Haiti. The first is isolation and the second is the paucity of water. (See map 1.)

The extreme isolation of the island is in part due to location and in part to the inaccessible nature of its coasts. The Ile á Gonave lies well out in the great Gulf of Gonave midway between the two mountainous peninsulas of the mainland. The routes which connect the mainland with the world pass by Gonave but never touch it. The only connections with the outside are made

by the irregular trips of the small native fishing and trading boats. Throughout its history, the repelling nature of the coast lines has proved an isolating factor. At the immediate water edge, either sea-cliffs or rank growths of mangrove present themselves. Landing along those shores marked by cliffs is nearly impossible, and beyond them barren rocky slopes extend inland. By using



Map 1. Gonave Island. (1) Most densely populated and productive. High and rainy. Most springs and waterholes average planting per family from 5–10 carreaux. (2) Thorn forest and unproductive. Fishing villages comprise almost only settlement. Fresh water usually secured by boat from springs near coast. (3) Sparsely settled but extensively cultivated. Water brought overland for considerable distances. Average plantings from 30–40 carreaux. Yields low due to aridity.

boats of very shallow draught, an occasional hole in the mangrove barrier may be used to advantage. Behind the mangrove thicket stretches a sterile saline flat of considerable width, which swarms either with mosquitoes or sandflies, depending upon the season. Behind this, the thorn forest occupies the lower slopes and is exceedingly difficult to penetrate. Giant "jiggers" add to the general discomfort of the thorn forest.

The Ile á Gonave is an asymmetric anticline, rising above a slightly submerged limestone platform which is genetically related

to the alluvial plains of the main island just east of it.[1] All of the surface rock of the island is of a more or less porous limestone. The entire development of minor land forms and drainage features is that of a karst area. There are no through flowing streams and but a few surface exposures of intermittent streams. There are but two or three springs which carry water all the year. A half dozen small springs flow for part of the year. An equal number of large water-holes have some water in them throughout years of normal precipitation. At two points near the shore, fresh water bubbles up in the sea. These sources constitute the only supplies of water available for domestic use and stock watering. Rainfall is low and erratic. The northwest peninsula of the mainland cuts off the moisture-bearing trades, while the southwest peninsula stands as a barrier to the winds of the Caribbean storms. The hills of Gonave are too low to cause much cooling of the atmosphere in themselves. The average annual rainfall, along the coast, is probably about 25 inches. This may increase to 40 inches on the higher interior lands. However, individual years depart widely from the average. 1923 and 1924 are said to have been without rain. In late August of 1926 the author encountered about five inches in one week along the coast.

There have been no artifacts discovered on the island to tell of an Indian occupation. The ceramic remains and the sites so common on the main island seem to be entirely lacking. The clay figurines which make up an important part of the modern voodoo doctor's paraphernalia are imported from the mainland. Probably, the island of Gonave has been more diligently worked in this respect than any other part of the republic, due to the fact that Lieutenant F. E. Wirkus, Gendarmerie d'Haiti, has been governor of the island for over four years and has searched it from end to end. This man has located numerous Indian sites and acquired an interesting collection of artifacts during his years on the main island.

However, following the murder of the Indian Queen Anacoana

[1] W. P. Woodring, J. S. Brown, and W. S. Burbank, The Geology of the Republic of Haiti (Port au Prince, 1924). Pp. 418–422 contain the first and probably the only geological or otherwise scientific work done on Gonave to that date.

by the Spaniards in 1504, many of her followers are said to have fled to Gonave.[2] It is probable that the Indians took refuge in whatever isolated and otherwise undesirable spot the whites did not want. On the mainland they fled to the higher mountains and the small island in the Lake Enriquilo. Soon these were joined by other refugees. The runaway or "maroon" Negroes followed the practice of the Indians and occupied whatever land would most likely leave them unchanged by contact with Europeans. They often escaped the moment of landing or dived overboard as the ship sighted land.

The French paid no attention to the island and knew practically nothing of it. Even the well-informed geographer and historian of the colonial period, Moreau de St. Mery, merely mentions its existence.[3]

Since the establishment of the republic the island has proved a place of refuge or banishment for political offenders. In recent years there has been an immigration of landless peasants from adjacent sections of the mainland.

As a result of this individual history there has been little contact with Europeans and there is little if any white blood represented in the population of the island. The social and economic development has been more closely allied to African elements than on the main island.

The Société Congo

Probably the most interesting example of this sort is the Société Congo. This name is applied to the very interesting secret societies which dominate economic and social life on the Ile á Gonave. In the pages to follow, numerous extracts will be included, as notes, which appear to have a bearing upon the origins of these societies.

---

[2] B. Ardouin, Geographie de L'Ile D'Haiti, 26. Eds. 1832, 1856 and 1864. (Port au Prince.) Dantes Fortunat, Nouvelle Geographie de L'Ile D'Haiti, 408 (Port au Prince, 1888).

[3] M. L. E. Moreau de St. Mery, Description topographique, physique, civile, politique et historique de la partie française de l'isle Saint-Domingue, 2: 527 f. (Philadelphia, 1797–1798).

These societies bear individual names and operate separately. In fact there is no central organization and the term Société Congo only designates the kind of society.[4] The purpose of these organizations is fourfold. First, they are cooperative labor groups; second, the members are afforded protection; third, they are mutual benefit societies; and fourth, they provide social entertainment. Two other functions are performed by these groups—disciplinary and religious. Through disciplinary measures within the organization, the members are sometimes compelled to act in accordance with civil law. This aspect can not always be relied upon, but is at times used for the collection of debts and similar offices.[5] The societies were not organized for religious purposes and ordinarily do not harbor religious ceremony. However, Voodooism, which is the deep seated religion of the mass, sometimes dominates the latter part of meetings which have been held for purely social purposes.

Each society has its own music, songs, dances, insignia, costumes, archives, and ceremonies.[6] Each society is open to men and women on an equal basis. There are no age or sex limitations.[7]

[4] J. H. Driberg, The Lango: A Nilotic Tribe of Uganda, 97, 1923: "These groups or associations for cultivation are more or less permanent and are called 'wangtich.' '*PurKongo*' is the term used when there are fifteen or twenty assistants. Work begins at dawn and ceases at sunset. The laborers work individually without apportioning tasks, and the reward consists of liberal supplies of beer drunk at the owner's village at the end of the day." P. 405, "Pur" (means) cultivation. P. 388, "Kongo" (means) beer. It seems possible that the term Congo, as used in connection with the Société Congo and the Dansé Congo of the West Indies and its African counterpart, may have been derived from this source rather than being a geographical or cultural designation.

[5] Hutton Webster, Primitive Secret Societies, 116, 1908. This author speaks of the Egbo society as being an efficient means of debt collection, which was sometimes used by European traders. On Gonave the society is used to aid in the collection of taxes and other legitimate indebtedness. The medical officer of the Occupation Force has also employed the society to compel a badly diseased member to report for treatment.

[6] Charles Partridge, Cross River Natives, 214, 1905. "Every society or club has its own costumes, insignia, music, dances and songs." P. Amaury Talbot, In the Shadow of the Bush (London, 1912). In speaking of Egbo among the Ekoi people this author states: "Each grade (division) has its particular dances and tunes" (p. 44).

[7] Hutton Webster, Primitive Secret Societies, 122. "True Egbo is for men only. But there is an affiliated society of free women—but it is subordinate. 'Idiong' or 'Idion,' an Old Calabar Society is open only to women and Egbo members.—'Lubuku' (society) of the tribes of the Lulua River allows general admission of women on the

The one prohibiting factor is inability to do a day's work. Each group is ruled by an elaborate array of officers.[8] In fact, as the number of members in any one society is limited to approximately the number of working days in the month there is almost an office per person. However, only the senior officer receives anything but glory from his or her incumbency.

The Société Congo is not confined within the Republic of Haiti to the Island of Gonave alone. A more or less similar institution bearing the same title is found in the mountains of the southwestern peninsula. There are likewise other organizations to be found upon the mainland which perform one or more of the functions of the Société Congo. Some of these organizations will be described in a later publication. However, in no part of the republic have the societies been so strongly developed or have they taken on so many individual characteristics as in the island of Gonave. This is doubtless a result of the fact that such an organization finds greater offices to perform under the peculiar natural and cultural conditions of Gonave.

We have already noted the low and erratic rainfall and the karst character of the country. The rainfall of the tropical wet and dry climates is everywhere exacting for the agriculturist. Add to this that the underlying rock material of the area absorbs the limited precipitation with extreme rapidity, and the problem becomes acute. Clearing, planting, harvesting, in fact, every detail of agriculture must be done on schedule.[9] The poor soil and rainfall conditions of Gonave and the primitive semi-milpa methods employed do not encourage large yields. In consequence, considerable areas of land are necessary for the support of the

same status as men.—'Ndembo' of the upper Congo admits men, women and all ages freely."

[8] P. Amaury Talbot, The Peoples of Southern Nigeria, 3: 763, 1926. "There is a kind of farmer's institution known as Owe, which, among Oyos, somewhat resembles a benefit club; it is a system by which a man can call upon others to come to help him in any big work, such as clearing a new piece of bush.—In Egba-land the Owe appears to be a properly organized guild *under a president and officers*."

[9] A. Werner, British Central Africa, 184, 1906. Referring to the peoples of the Shire districts, also with a tropical wet and dry climate "Hoeing and weeding are sometimes got through more quickly, when time is pressing—as when the first rains have fallen—by means of a 'bee'."

family. Furthermore, land is to be had in plenty, for Gonave is still a frontier. The problem of clearing thirty or more acres of tropical vegetation is impossible for one man. By the time he is ready to plant, the first acres cleared will be brush-covered again. The planting, too, of such an area could scarcely be completed in the time necessitated by weather conditions. Furthermore, the average individual owns but one tool. In order to clear and plant, he will need at different times a machete, a hoe, an axe, or a crowbar. Within the society there are several of each of these tools. There is a marked tendency, often advised by the chief officers of the organization, toward the specialization of production by individuals. The peasant with a tract of coarse textured soil may produce only yams and "patats." One with compact soils specializes in legumes. Others will produce chiefly manioc, or malanga, or native cotton. Those, with land in the moist bottoms of sinkholes or solution valleys are likely to produce chiefly plantains. All differences can be ironed out later by barter within the society. Each crop has different dates of planting, cultivating, and harvesting, so that an admirable distribution of the labor results. The work of the society is largely planned for the year and directed throughout by the senior officer so that considerable unity of purpose is found. The efficiency of the societies is easily seen when the gardens of members are compared with those of individual farmers.

Another condition which has encouraged the rise of the societies has been the condition of government. The island of Gonave has been a football for Haitian politicians. Throughout the history of the republic, it has been held as a concession by one or a group of political favorites then in power. The only interest which the concessionaire has held in the island is to exploit it to the limit. Heavy taxes have been made heavier by the greed of the local tax collector. Peasants have been forcibly removed from the hut and garden which they have worked for several years to improve, only to have it given to some favorite of the local official. There has been no more, if as much, protection of life and property on Gonave than on the mainland. "Caco" bands have roamed and pillaged the countryside. Then, too, the "Hounga" man

(witch-doctor) is often a menace to individuals.[10] The unity of the society is an efficient method of combating these evils and does so with great success.

Every member of the society is assured proper burial and burial ceremonies. This is an important function in the mind of all Haitians. Weddings or rather "placements" are duly celebrated by the same body. In case of sickness or inability, due to old age, the society assists where necessary in providing food. In some cases, the society forcibly intervenes to compel a member to do things for the welfare of the individual concerned. Under the harsh conditions of life encountered on Gonave, such assistance goes a long way toward the mitigating of suffering.

Almost the entire social life of the members is found within the society. During working hours singing, drinking, and general good fellowship prevails. It is certain that more labor per man is obtained with these stimuli than would ever be the case otherwise.[11] Meals and liquid refreshments are served by the host at the end of each day's work. Frequently a barbecue and dance are held that night by the member whose field has been worked. The celebration of Saints' days, funerals, "placements," and other events keep the program of social engagements full.

What has been said so far applies in general to all of the societies which bear the general title of Société Congo. We will now consider in detail the organization and activities of one particular society which the author had opportunity to study rather closely.

The "Model de Paris"

The society, "Model de Paris," functions in the Section Grande Sources which lies in the interior upland of the southern

[10] John H. Weeks, Among the Primitive Bakongo (London, 1914). "The 'raison d'etre' for the Congo secret societies is lost in the dim and distant past. It may be that they were started to hold in check some tyrannical chiefs or to give mutual protection to members from the exactions of an upstart class of nobles or to afford protection against charges of witchcraft and the evil designs of witches—or they may have been organized to render aid to their members in their travels about the country for trade or other purposes.

[11] J. H. Driberg, The Lango: A Nilotic Tribe of Uganda, 97. In speaking of the "wangtich" agricultural societies, the author states: "Hard work and long hours are expected—and ungrudgingly accorded, with the result that cultivation by this semi-communal method far exceeds the possibilities of individual work."

The "Model de Paris" ready for the day's work.

The Queen of the "Model de Paris."

The President and two of the society's members
in ceremonial attire.

Filling gourds at the spring at Anse á Galet.

A part of the village of Anse á Galet.

The "Reine de le Drapeau" (front center), the "Sergeant d'Armes" (right front), the two drummers (right rear), and other members of the society.

portion of Gonave. This organization is possibly the strongest on the island and is one of the oldest. It is said to have a recorded history of more than a half century. However, it differs but little in organization and function from other branches of the Société Congo in the same general vicinity. In fact, the woman who "rules" this particular organization also heads two other similar societies. It was largely through her friendliness that the more intimate details herein included were made available.

The membership of the "Model de Paris" is limited by its constitution to twenty-nine members. This number is generally maintained, as membership is highly desired by persons not belonging to such an organization. There is a long waiting list. When a vacancy in the society occurs, due to the death, departure, or expulsion of a member, the applicant with seniority on the list is first considered by the society. At a very dignified and formal meeting, vote is taken by ballot. If not more than one member vetoes the applicant that member must state, before the entire society, his reasons for disapproval. If these reasons are considered as serious by the other members, the applicant is not accepted. If two or more members object, the name is dropped. In either case, the applicant is formally notified that "no vacancies exist." He can not again enter his name until one year has elapsed.

The officers of the "Model de Paris" with their respective duties follow:

1. "*Reine.*"—The chief officer of the "Model de Paris" is La Reine. In fact, in all of the societies the chief officer bears the rank of emperor or queen, depending upon the sex. In case the society is headed by a man there is also a queen, but she has no particular powers. If, as in many societies, the chief officer is a woman, no male member bears the title of emperor. The duties of the chief officer are complex. On that incumbent devolves the responsibility for all action and a considerable portion of the policy of the society. In the "Model de Paris" the queen personally keeps the archives, which consist of names of active members and a record of past members. It is her duty to see that each member does his or her work and in turn receives the benefits of the society. It is she, who, with the advice of the society, plans the year's campaign. She must then see that the plans are carried to fruition. This includes the allocation of crop production and the temporal distribution of labor. Through her each member is notified each evening where and when to appear the following day and what the nature of the work is to be. Through her all orders for disciplinary action and all

invitations for social events are issued. These invitations have the full weight of an order and any disobedience of them is subject to drastic punishment. The responsibility of seeing that every deceased member is given a decent burial devolves upon the queen. In such cases, the society is called together and each member is assessed by her. The order of ceremony is her responsibility, the actual operation is directed by the Division de Société. The ceremony involves a great deal of mourning, singing, dancing, and drinking. The society goes about the immediate countryside in single file with each member wearing the formal insignia or costume of his office.[12] The cross and the Saints are much in evidence, as are the paraphernalia of the Papa and Mama Loi. In fact there is no differentiation between the two creeds. There is but one religion—an indefinable compromise. When a member becomes ill, each member of the society is ordered in turn to furnish food and take care of the disabled person's livestock and other immediate demands.[13] When any member becomes involved in difficulties with the local officials the queen intervenes on the application of the unfortūnate and arranges a settlement. In return for these arduous duties, La Reine is well repaid. She is exempt from all manual labor and receives two full days' work on her property. She is the only officer who receives any material gain. As the particular queen in question also "rules" the "Fleur de St. Rose" and the "Fleur de St. Andrew" she receives six days of labor and so maintains the largest and best cared for garden on the island. She is also accorded many honors. On her approach, the tomtoms give four ruffles, the flag is lowered, all members stand at attention, and the machetes are brought to the position of "Present sabres." This rule applies whether the society be at work, at the dance, or at court. Various other formal courtesies are given, such as the persistent use of her title in conversation, standing at attention when speaking to her, and passing her the first cup of rum or the first helping of food.

Her influence in the community is great. She is respected and loved by all. The gardens of the members of her societies are the best tended of any on the island. Her advice is sought on many personal matters and frequently followed. She is referred to affectionately as "Te (petite) Menin" (little ruler) in spite of the fact that she weighs 250 pounds or more.

2. "*President.*"—The presidency of the society usually devolves upon some elderly member, whose wisdom and wealth are well recognized. He stands as first adviser to the chief officer and takes her place when she is absent. He is accorded much respect and the formality of his title.

3. "*President de Confidence.*"—He is the vice-president of the society. He, too, is an adviser and takes the president's office when that dignitary is absent.

---

[12] Partridge, op. cit., 215. "When a member dies, the other members sing and dance at his funeral obsequies. . . . . The 'mourners' paint and adorn their bodies, and drink as much gin and palm-wine as they can get, and spend hour after hour—sometimes the whole night—in 'dancing' about town in single file."

[13] Partridge, op. cit., 111. "When an old member is too old or too sick to find food for himself, the club (Egbo) does it for him."

4. *"Chef de Société."*—This officer is chosen as the ablest agriculturist. He directs the operations of the society in the field.

5. *"Division de Société."*—This officer is in reality the drill master. He is responsible for the instruction of the society in all its formalities. When the queen or an important civil official approaches, he gives the order of attention, sound drums, and present arms.

6. *"Reine de le drapeau."*—This officer is the color bearer. She is responsible for the society's flag. When the society is at work or in session, the flag must be exposed for all outsiders to see. She carries the flag to all meetings of the society and observes the formalities pertaining to it.

7. *"Sergent d'armes."*—This officer advises offenders to appear for trial and stands to the right of the accused during the trial. He also does the "sword work" (with a machete) at all ceremonies.[14]

8. *"Conseils."*—Two "conseils" are among the officers of the society. Any member brought up for trial may choose one of these as attorney for the defense. The other then becomes the attorney of the prosecution.[15]

9. *Miscellaneous officers.*—The "Model de Paris" had three drummers at the time of investigation. Two of these men were exempt from manual labor in the field but their presence was always required. They follow the workers and beat their "tomtoms" continuously. The third drummer functions only at purely social events. These officers have no semblance of permanency and accrue to those members with the greatest talent.

One person is designated to properly kill the animal paid as a fine by an offending member. Another is the master of the barbecue. Almost any office will from time to time have an assistant. All offices bear some dignity and every member holds some office from time to time.

The Responsibilities of Membership

As the Société Congo is primarily a cooperative agricultural organization the responsibility of membership is largely related to agricultural matters. In fact, many members leave the immediate community and even the island to engage in other activities during the dry season. During this or any other absence, all property is left under the protection of the society. The dark red flag is placed above the peak of the absentee's roof and signifies that any trespasser will be answerable to the society.[16] The society only operates in full force during the crop season, which extends

[14] The titles of certain officers, the commands of the "sergent d'armes" and drill movements of the society are closely related to the French military.

[15] The title "conseil," the duties of that officer, and the court proceeding are doubtessly due to French rather than African influences.

[16] Hutton Webster, op. cit., 116. "Calabar people who find it necessary to be absent on a journey, place their property under the protection of 'Egbo,' by fastening the badge of the society to their homes."

from the middle of February to the first week in September. Each member receives one day's work by the entire society on his property and a definite system of rotation is practiced.[17] Each member then knows when to prepare for the group on his property and where he is supposed to report for work on the following day. In spite of this system the queen issues invitations to each member every evening, stating not only the place but also the time and the type of work. A number of things may happen to change the rotation temporarily. Any member is privileged to sell his day of work to the one who follows him. The established price is 50 centimes de gourde (10¢) per worker. The seller saves the price of entertaining the group and the purchaser receives two consecutive days of work. Illness, inclement weather, etc., may temporarily halt the proceedings, but the rotation is never broken.

A member may purchase the right to membership without working and still receive his days of work from the society as well as all the other benefits. This is done by paying each member 50 centimes de gourde a month. Members of this sort are rare and usually old men with some money, who are considered solid citizens of the community. Non-members may arrange with the queen for the employment of all or part of the society during the off-season. The rate again is 50 centimes per worker per day.

A Day in the Field

The society meets at early morning in order to accomplish as much work as possible before the intense tropical heat becomes too pronounced. The "Reine de la drapeaux" posts the society's flag of plain dark red, at some conspicuous point on the nearby trail. The "Chef de Société" divides the workers into two lines, sees that tools are properly distributed, and gives instructions for the day's work. The drummers sound the signal to begin and keep up a rhythmic beat as the tools of the workers glisten in the early morning sun. Before many moments, a voice joins tune with

---

[17] Duncan R. Mackenzie, The Spirit-Ridden Konde, 118 f., 1925. "Working parties are often formed for the hoeing, *the group spending one day in each garden*, and being fed by the owner in each case. When a headsman's garden is being done, beer is provided, and the chief usually kills an ox when he has a party hoeing for him."

the drums. When the solo is finished the entire society joins in the chorus. It is usually an old song and well known to all. The drums beat incessantly and the tools rise and fall in unison with it. Every now and then, someone sings out and the group joins in the chorus. Many of the songs are extremely lewd. New verses are often created but the tunes do not change. Always it is the solo followed by the chorus.[18] The music of the drums and the tunes and words of the songs are usually enough to inform anyone acquainted with the island as to just what society is at work.[19] The drums especially can be heard at great distance.

The owner of the property has been arranging for days for this event. Now he moves down the line passing out drinks of "taffia." Before long everyone is feeling the effects of the raw liquor and songs become lustier and lewder. Shouts of laughter follow the creation of an unusual verse. The workers call in a high voice to peasants along the trails. The whole event is hugely enjoyed.[20]

About eleven o'clock, the drummers sound the order for rest and the society gathers in the shade of the host's hut. A meal of yams and millet cakes or congo beans and cassava bread is served. The "taffia" container is always in evidence and the neighborhood resounds with laughter and shrill voices.

At about two o'clock work begins again and the performance of the morning is repeated. By four-thirty or five the "Chef de Société" usually signals the drummers to sound quitting time, if this has not been done by the host.

The evening meal is then served. This is much more elaborate

---

[18] J. H. Driberg, op.cit., 129. " . . . . Every now and then one will get up and sing, sometimes an old song, sometimes an improvisation, but always whether old or new, the rest join readily in the chorus.—They (the songs) always consist of a solo or recitative and a chorus.—Songs of an indelicate nature are not unusual."

[19] P. Amaury Talbot, In the Shadow of the Bush, 413, 1912 (referring to the Ekoi people): "All clubs have different tunes and peculiar ways of beating the drums, so that even at a distance it is easy to tell which of the many societies is holding a celebration."

[20] A. Werner, op. cit., 184. "The owner invites all his neighbors, men and women, and prepares large quantities of beer, with which they regale themselves after a hard morning's work. Sometimes, the pots are carried out to the garden and the party consumes refreshments there. Each person has a certain piece of ground allotted to him or her—'a roe to hoe' and the work is got through with singing and mirth."

than the noon meal and contains a number of dishes. Some meat or fish is usually included and wheat flour biscuits are occasionally served as dessert. The "taffia" is served in greater quantities. Sometimes the host issues an invitation to the group to remain for a dance that night. Before the group breaks up the "Division de Société" lines the workers up and the "Chef" asks them if they are satisfied with the treatment they have received. They all answer together either to the affirmative or negative. The "Chef" then asks the host if he is satisfied with the amount and quality of work done.[21] He answers and gives his reasons for the answer. In case of a negative answer in either case, the queen is called and both arguments are heard. If the host has been lax in affording food and drink he is fined and pays in more food and drink. If the society is found to be in the wrong they return for a while on the following Saturday and complete the work. Between two and three carreaux (one carreau is equal to 3.10 acres) is considered a good day's clearing or planting. When both sides are satisfied the meeting ends by a dipping of the flag to the host.

The majority of cases referred to the court are for not heeding the "invitation" to work. Should a member fail to appear, a red flag is placed on the roof of his house. This usually takes place early the following Saturday morning and means that the member is under arrest. He is not permitted to leave his hut or talk to anyone until the court assembles in his yard that afternoon.[22] The Queen, President, and "Chef" act as judges and the attorneys for the defense and prosecution present their angles of the case to the whole society. The judges present their decision to the society for approval, which is almost always given.

[21] J. H. Driberg, op. cit., 97. "Only in case of extreme poverty or when famine has consumed all supplies does a man cultivate unaided. Assistance is normally procured from his friends and neighbors in return for food and drink after the day's work, and the extent of assistance thus procurable is conditioned by the size of the reward, *regularized by custom, and designated by standard terminology.*"

[22] C. F. Schlenker, A Collection of Temme Traditions, Fables, and Proverbs, xiii, 1861. "The Temmes who have the 'Purrah' institution use the same method to give notice of the excommunication of an individual who has fallen under the displeasure of the society. A stick to which are fastened some leaves of grass, placed in the offender's yard, is a warning that he is not to leave his farm or have anything to do with anyone until the ban is removed." Quoted from note 6, Webster, op. cit., 116.

If the accused cannot prove sickness or some other complete alibi he is sure to be convicted. When brought to trial he is said to be "burned."[23] If found guilty a red handkerchief is tied about his arm above the elbow. Then the queen selects the largest and fattest hog or goat which the member owns and it is killed "against"[24] him. A barbecue and a dance follow. The victim is compelled to furnish the drinks immediately upon conviction and thereafter until the party terminates. This it usually does not do until well into Sunday. The entire society, however, turns up at the man's hut at some later date and works free for him for a part of a day to help offset the cost of the food and drink which they have consumed at his expense.

For more serious offenses, expulsion from the society is the common penalty. It is said by non-members that bodily torture and even death are meted out to those who betray the society or commit serious offenses against it. This the author believes to be mere gossip. However, in the long protracted dances and drinking festivities, voodooism probably enters and crimes may be committed in the name of religion. Again, however, the author believes such incidents to be exceedingly rare.

Conclusion

The Société Congo is primarily a cooperative agricultural society. It has, in addition, social, protective, and benevolent functions. In its organization and operation, influences of American Indian, French, and African cultures can be seen. Adjustments to local conditions can also be noted.

The crops produced—notably the yam, cotton, cassava, and maize—are inherited from the Indian, as is the semi-milpa system of agriculture. The French contribution is chiefly in language,

---

[23] G. Cyril Claridge, Wild Bush Tribes of Tropical Africa, 201, 1922. "The poor fellow was what the natives call '*burnt*.' To court he had to go, where he listened to an eloquent indictment against himself before paying the penalty (the price of a pig)."

[24] Charles Partridge, op. cit., 111. In describing the Egbo societies of the Obubura Hill district, the author quotes a member as saying: "In the old time, if we wanted any young man to join, and he refused, our chief went into town and killed a goat 'against' him and he had to pay its value to the owner. A cow was shot 'against' a member for disobedience."

religion, and tradition, all of which temper the whole. The celebration of Saints' days and the names and even the functions of some of the officers are examples of this influence. The temporal distribution of activities, methods of agriculture, and the relation of the organization to society at large result in part only from the natural and cultural environment of Gonave.

The organization and origins of the Société Congo appear to be primarily African. Not that any one African secret society can be found which will present an exact duplicate but rather the society, like the people of Haiti, is a composite drawn from many parts of the African continent.

UNIVERSITY OF MICHIGAN,
ANN ARBOR, MICHIGAN

THE SO-CALLED "HOMINY-HOLES" OF KENTUCKY

By W. S. WEBB and W. D. FUNKHOUSER

EVIDENCES of what apparently represents a peculiar method used by aboriginal Americans in grinding corn or other materials are to be found in certain parts of Kentucky in the form of ancient mortars commonly known as "hominy-holes." They occur on the floor of rock shelters or in boulders at the entrance to such shelters in the cliff regions of the state, and consist of conical holes excavated in the rock and generally worn smooth and deep by long use. In or near such holes may usually be found the pestles which were evidently used for crushing or grinding the grain in the holes. The holes are often two or three feet deep, generally six or seven inches in diameter at the top and gradually narrower toward the bottom. They are usually bored straight downward in the face of the cliff or in an exposed ledge or fallen boulder not far from the overhanging roof which provided the shelter. That they were an absolute necessity to the dwellers in these shelters and that they were constantly used is proved by the fact that it is very unusual to find a true rock shelter in the particular region described without one, and the additional fact that where a long series of shelters are found along the face of a single cliff, there are generally one or two and sometimes several holes in front of each shelter. In such cases one of the holes will be very deep, perhaps so deep that it could no longer easily be emptied, another will be shallower, and perhaps one or two others just started. The pestles are usually of limestone, from six inches to a foot or more in length, two or three inches in diameter, roughly cone-shaped, broad, flat and flanged at one end and rounded at the other, and sometimes marked with ridges or grooves. The lips of the holes are also occasionally grooved or roundly notched. There seems to be no question but that this represents a primitive type of grinding mill which, so far as we are aware, has not been commonly found in this country

nor carefully described in previous archaeological reports from this part of the Mississippi valley.

Geographical Distribution

So far as we have been able to learn, the sites of these hominy-holes are limited to that part of Kentucky which is drained by the Green river and its tributaries. We have traced them through Hardin, Breckinridge, Grayson, and Hart counties along the streams emptying into Rough creek and Nolin river, both of which are tributaries of Green river, and have records of them in Ohio, Muhlenberg, and Logan counties, all of which are in the Green river drainage area. We have yet to secure a record of a hominy-hole from any other part of the state. It would be rather interesting if the distribution proved to be limited to this particular region, as now seems to be the case, and to represent the habit of a single group of people living along this one watercourse. We have previously reported hominy-holes (*Ancient Life in Kentucky*, 144–46, 1928) from a number of localities in this area and, in fact, were able to bring to the University of Kentucky a single huge sandstone boulder containing such a hole from Hart county, after bringing it down the side of the cliff, dragging it a mile or more over a creek bed, and carrying it twenty miles on a wagon over extremely bad roads to the nearest railroad, but only recently have we been impressed with the apparent definite and limited distribution.

Topography

The Kentucky cliffs abound in overhanging walls of rock, beneath which shelter is easily obtainable. These shelters are locally known as "rock-houses" and were undoubtedly used as habitations in prehistoric times. Within the shelters are often found graves and beneath them, at the foot of the cliffs, large kitchen-middens, sometimes so extensive and so full of bones and other organic matter, that the farmers of the neighborhood haul the material away and spread it over the fields to enrich the land, a purpose to which it is well adapted.

The region under discussion lies partly in the so-called "Knobs" and partly in the cavernous limestone area of the state. In the

Knobs the geological outcrops are largely in the Chester series and the cliffs and overhanging ledges occur along the canyon walls of streams where the water has cut a gorge and has eroded the softer strata of the sandstone to form the pockets or caverns; in the latter, the streams are largely underground and form the "lost rivers" and subterranean waters for which the region is famous. Here the shelters are in the sides of old valleys or above large sinks. The country is very rough and the shelters, due to more recent erosions, are often almost inaccessible. The region is largely unproductive and is thinly settled. Travel is extremely difficult since the dirt roads are impassable in wet weather and the cliffs can be reached from the nearest highway only on horseback. It sometimes happens, too, that strangers are not welcomed, since the ravines beneath the cliffs may shelter other industries than those of prehistoric tribes who used the hominy-holes, and it is not always good policy to insist on extended explorations. However, the authors have usually been able, by assurance that they were deaf, dumb, and blind to everything but hominy-holes while in the gorges, and that they promptly lost their memory afterward (an assurance which, needless to say, has always been religiously observed) to locate the sites and make measurements and photographs.

Special Sites

The authors have recently made a short survey trip into parts of Hardin and Breckinridge counties and are able to report the following definite sites of hominy-holes which have not been previously recorded. Due to the fact that it rained almost continuously during the entire trip, the conditions for photography in the dark rock shelters were extremely poor but the photographs here reproduced will, it is believed, give a fair idea of the appearance of the hominy-holes and their environments.

1. Hardin county. Nine miles southwest of Vine Grove. On farm of Hugh Yates.

A line of cliffs averaging about 90 feet in height extends for over a mile in a rough northeast by southwest curve across this area. They stand above a broad depression, 775 feet above sea level, in which are several ponds. The outcrop is Cypress sandstone. Two shelters are found in this cliff.

The first is large and faces due east. The floor is of made dirt which has been excavated to a depth of nearly fifteen feet without reaching a rock bottom and the dirt has been spread over the surrounding fields for fertilizer. This made dirt contains a large amount of ashes and animal bones and in it were found fifteen or more human skeletons and many hundred artifacts. The authors secured a large number of the artifacts and one human skull. The owner of the property had agreed to save the other skeletons and had brought the bones to the house and piled them behind the wood-box in the kitchen. Immediately, however, his wife's rheumatism became so bad that he removed the bones from the house and plowed them under between the corn rows. (We were not able to learn whether or not the rheumatism at once improved.)

The hominy-hole in this shelter is in a ledge which projects about 2 feet from the northeast wall. The hole measured 8x7 inches in diameter at the top and is 2½ feet deep.

The second shelter on this site is less than a hundred yards from the first, around a bend of the cliff, and faces southeast. This is a smaller shelter and the rock floor is covered by only a few inches of dirt. The hominy-hole is on the floor, 5 feet from the back of the shelter. This hole is 7 inches in diameter at the top and 26½ inches deep.

2. Hardin county. At Solway, 16 miles southwest of Elizabethtown. On farm of Henry Aubrey.

A line of low cliffs, averaging 40 to 50 feet high, extends in a north and south direction for several miles across this region. At this particular site the land slopes gradually from the cliffs to a small stream which proved an excellent collecting ground for water snakes.

The hominy-hole is in the top of a large sandstone boulder, 32 feet directly east from the base of the cliff. The boulder measures 15½x19 feet in diameter and is 4 feet high. The hole is 7½ inches in diameter at the top and is 2 feet 3 inches deep.

3. Hardin county. One mile due north of Solway. On farm of Noel E. Cundiff.

The cliffs here extend roughly east and west and are very high. The shelter is large and crescent-shaped and faces south.

The hominy-hole is in a partly exposed sandstone boulder 4 feet from the back wall of the shelter and 50 feet from the stream bed below. The hole is 6 inches in diameter at the top and is 2 feet deep.

4. Hardin county. At "Cow Cliff," 4 miles southwest of Howe's valley.

A series of high cliffs extending in a general northeast by southwest direction contain a number of fine rock shelters from which on a previous expedition the authors secured many artifacts and found large amounts of ashes, broken pottery, and animal bones. These shelters are extensive and show evidences of long habitation.

In the largest of these shelters, which faces northwest, are two hominy-holes in sandstone boulders lying side by side. The larger of these boulders measures 27 feet in maximum circumference and the hole is 8x7 inches in diameter and 2 feet deep.

The second hole is in a larger, flatter, lower boulder, which is only partly exposed. This hole apparently represents only the beginning of the grinding process since, although it is 8 inches in diameter, it is only 5 inches deep.

5. Hardin county. One and one-fourth miles southwest of Cow Cliff. On farm of Hendrix Cundiff.

In many respects this is the most interesting site we have ever examined, since three hominy-holes are to be found in the top of an enormous boulder and the edges of the holes are deeply grooved, the possible cause of which will be discussed later.

The shelter, which is a large one, is situated high up in the face of a short, high cliff extending northeast by southwest, with the exposed face towards the northwest. The shelter itself faces almost due north.

The boulder which contains the holes stands 7 feet above the present level of the dirt floor and measures 24½ feet in circumference. The holes are in the top of the boulder and are of different sizes. The largest is 6½ inches in diameter and is 2 feet 5 inches deep; the next is 6 inches in diameter and 2 feet 3 inches deep; the smallest is 4½ inches in diameter and 8½ inches deep.

6. Breckinridge county. At the Nebo schoolhouse in the town of Dyer, 10 miles east of Garfield. On farm of C. D. Powell.

A line of low cliffs, not more than 20 to 30 feet in average height, and extending for only about three hundred yards, contains several shallow rock shelters. The cliffs extend east and west and the shelters open toward the north.

One shelter, which varies from 4 to 6 feet in height and is 17 feet deep, contains a hominy-hole in the floor a few inches from the back wall. The hole is 7 inches in diameter and 2 feet deep. A broken limestone pestle was found in the bottom of the hole. This pestle may have been used as a plug to raise the bottom. This shelter is protected in front by a large boulder, so that entrance is afforded only at the sides, around the boulder.

We have the record of another hole which was formerly located 75 yards due east of this shelter but which has recently been destroyed. This hole was a larger and deeper one and marked the corner of the lands of W. A. Allen, C. D. Powell, and the Nebo school. An old deed made this "Indian Hole" the corner of a boundary line.

7. Breckinridge county. Three hundred yards east of the Constantine Hill Mill Pike, 3 miles southeast of Constantine. On farm of Bill Skeeter.

These cliffs are on a tributary of Rough creek, about 4 miles below Williams' Mill. The country is very rough and in the wet weather in which the site was visited the approach was very difficult. There are four large hominy-holes in a ledge beneath the cliff, which are plainly visible from a higher ledge on the opposite side. High water and other obstacles prevented measurements and photographs.

8. Hardin county. Six miles southwest of Howe's valley on the Salt River road. On farm of Sam M. McGuffin. Locally known as the "Deer Cave Cliff."

In a long line of cliffs about 600 yards west of the road is a fine shelter,

50 feet deep and 150 feet across. The overhand which forms the roof of the shelter is a stream valley and a small waterfall flows over it.

The hominy-hole is in an exposed ledge, which is level with the floor on one side and 2 feet high on the other. The hole is 5 inches in diameter and 1 foot, 2 inches deep. A stone plug was found in the bottom of the hole.

9. Hardin county. Three and one-half miles south of Howe's valley. On farm of J. W. Love.

A series of cliffs running roughly east and west contain a number of good shelters on the south face. The largest of these shelters, which is 30 feet deep, 120 feet long, and 40 feet high, contains two hominy-holes, both on the sloping rock floor. Both holes when visited were entirely hidden beneath a luxuriant growth of poison ivy.

The larger hole measured 11¼x8¼ inches in diameter at the top and was 2 feet deep. The smaller hole was 7 feet, 8 inches east of the other and higher up on the slope. It measured 5x4 inches in diameter and 13¼ inches deep.

Probable Method of Grinding

There are to be found in Kentucky, in considerable number, four types of stone pestles as shown in plate 58. Three of these types, *a*, *b*, and *c*, are common to all parts of the State, except the region under discussion. They are, however, not found under cliffs and rock shelters or in association with hominy-holes. These forms may be described briefly as (a) bell-shaped pestles, to be used in grinding in a lap-stone mortar; (b) short, cylindrical pestles, also used in hand mortars, and (c) specialized ellipsoidal river pebbles, to be used on rubbing stones. All of these pestles show the result of use, the grinding process producing a smooth surface on the base of the bell pestle, on both ends of the cylindrical form, and on the oval surface of the pestles used on the rubbing stone. These forms were therefore used to *grind* grain by sliding or rolling over the surface of the mortar. Plate 58*d* is the only type of pestle found in association with the hominy-holes. The specimen figured was taken at a depth of seven feet from a trench about the base of the large boulder having a hominy-hole in its top, under Cow Cliff, Hardin county, as previously described. This pestle was near the original floor level of the rock shelter, resting on sandstone. Sassafras growing on the sides of the cliff had sent its roots some twenty feet along the old floor of the sandstone shelter and had wrapped themselves about the pestle, which is of limestone. They had thus etched their

pattern on its surface. However, quite enough of the original artifact remains to indicate that this type of pestle is quite different in use from the ordinary bell-shaped pestle used for grinding in mortars.

The usual bell-shaped pestle is smooth on the base (the result of grinding) and generally rough on the handle. This hominy-hole pestle shows great wear over the pointed end and shaft and is rougher on the base. A careful investigation shows that every pestle found in association with hominy-holes is bell-shaped, and worn by use on the point. This very strongly suggests that they were used in these hominy-holes, pointed end down. If so used, they crushed the grain not by grinding in the hole, but by percussion, being raised and allowed to fall. Thus is offered a simple explanation of how the hominy-hole was originally made and kept roughly conical in form and why it gets much deeper instead of larger with continued used. In general the diameter at the top is about the same (7 inches), no matter whether the hole be one foot or three feet deep. In fact many holes are found so deep that it must have been inconvenient to remove the meal after grinding. This might necessitate the starting of a new hole. As previously stated, holes an arm-length deep are often found in the immediate vicinity of smaller and newer holes—often in the same boulder. This would seem to indicate that the hole was worn deeper by continued percussion, the grain cracked by the impact, rather than by true grinding. It is apparent that an old hole would be more efficient in preventing the scattering of the material ground than a very shallow new hole, if the percussion method was used.

It would therefore seem natural that primitive man here would use a hole as long as possible and would thus defer the time of starting a new hole in a given locality. When a hole became too deep to be convenient, it is quite natural that in some cases he would fit a plug in the bottom of the hole thus to raise the level of the bottom and make it possible to continue the use of this hole rather than start a new one. In seeking a plug for this purpose he would require a tight-fitting plug, hard enough to stand the blows of a limestone pestle. It would be natural to

use for this purpose a portion of a limestone pestle, which having been previously used (and probably broken) in the hole, would probably make a good fit, and would be as hard or harder than the sandstone about it. This seems to be the explanation of the finding by the authors of a number of hominy-holes, each quite deep, containing a plug of limestone at the bottom, the plug having clearly the appearance of a broken section of pestle (see pl. 47).

The bell-shaped pestles under the cliffs near hominy-holes are from five to eight inches long. This would necessitate their attachment to a handle or shaft some three feet or more in length for use in the deeper holes. These pestles all show a concave depression in the base and in general one or more flattened sections on the rim of the bell, as if for attachment to such a handle.

Under the Cundiff Cliff previously referred to there is a large boulder somewhat higher than a man, in the top of which are three hominy-holes. On the outer rim of this boulder there has been cut in the hard surface, a score or more of nearly vertical furrows, each about two inches in diameter, and extending from the top of the boulder over the rim and down the side where the furrow fades out. These grooves are about two inches deep at the deepest part. If from their position we may assume that they were made in the process of use of the hominy-hole, the process of grinding by percussion must offer an explanation of their production. It is well known that primitive man was well acquainted with the forces of elasticity and made use of them in setting snares, and in the bow. If he could have bent down a young sapling growing near this boulder, or used the limb of an overhanging tree, the pestle and its shaft might have been attached and caused to move up and down by pulling the tree down and allowing it to spring upward. Such a simple mechanism would not have been beyond the ability of the primitive dwellers under these cliffs, and such a device would easily account for the grooves on the side of the boulder, as in order to pull down the tree limb it would be quite natural to attach to it a rope of grass, leather, or perhaps a wild grape vine, and as the pestle was caused to work up and down, this rope dragging over the edge of the boulder would saw out the furrows as found. While it may

Kentucky Cliffs

Outcrops of Cypress sandstone in Hardin county in which shelters are found. The boulder in the foreground contains a hominy-hole.

Rock Shelters

Showing entrances to shelters in a line of low cliffs. In one of these shelters was found the hominy-hole shown in plate 5.

Characteristic Rock Shelter
A thin waterfall pours over the cliff at the left of the photograph.

A Typical Hominy-Hole
Made in the top of a sandstone boulder.

Inside a Rock Shelter
Showing a hominy-hole near the back wall and beside it a pestle found in the hole.

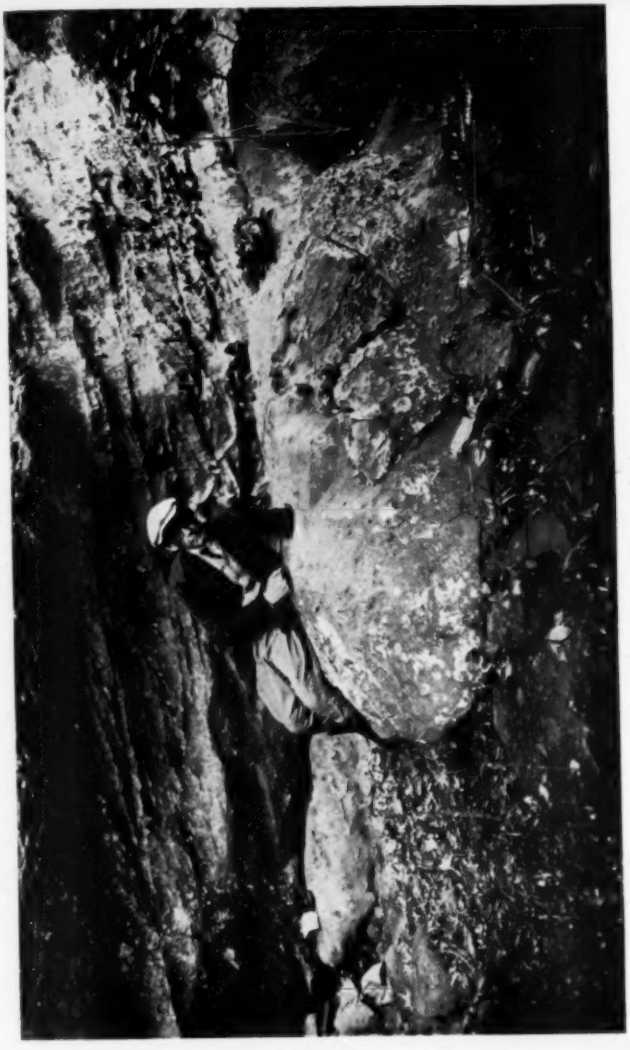
Mouth of a Hominy-Hole

These holes are usually six or seven inches in diameter at the top and two or three feet deep.

A Boulder Hominy-Hole
A characteristic boulder with the hominy-hole in the top.

A Fine Specimen

The boulder in which this hole is situated was the largest discovered.



Showing Depth of Hole
The arm inserted in the hole gives an idea of its depth.

A Ledge Hole

This hominy-hole is in a low ledge near the back wall of the shelter.

Old and New Hominy-Holes

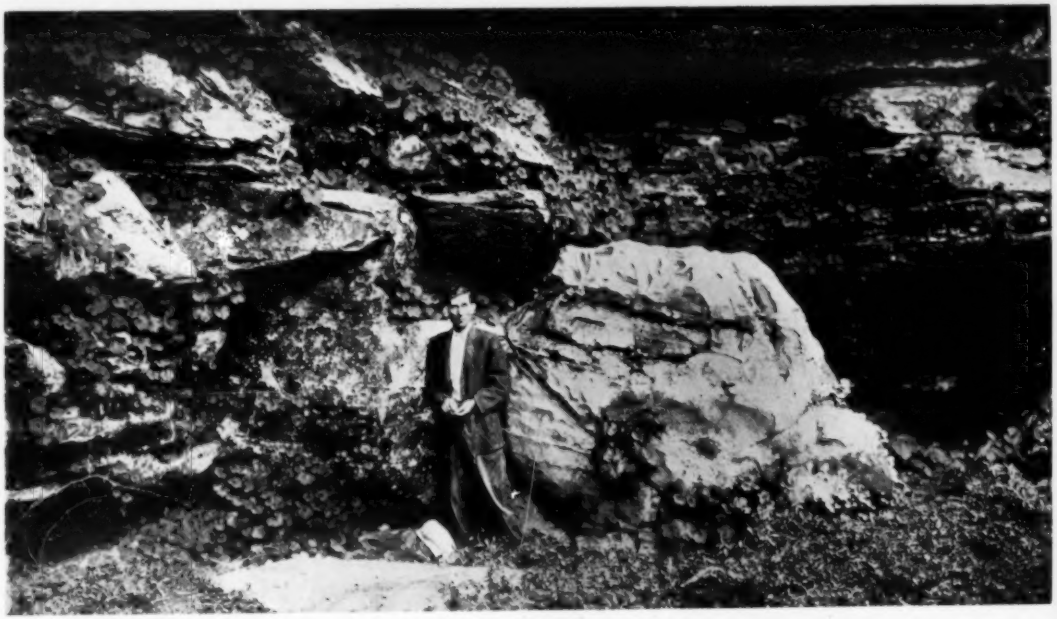
The small boy has a stick in the larger hole; the other hole is to the right and slightly higher than the older one.

Twin Hominy-Holes
In neighboring boulders under a cliff.

A Floor Hole
Hominy-hole in the floor of a rock shelter.

A Deep Hole

The bottom of the hole can barely be reached by the tips of the fingers.



A Giant Mill

The human figure shows the comparative height of the boulder. Three hominy-holes are in the top of the boulder and the edges of the rock next to the holes are grooved.

Pestles

The one on the right-hand side, labeled "d" is the type associated with hominy-holes.

not be positively proven that this method was actually employed, there seems nothing in the position of the holes, the grooves, or the boulder which would interfere with the employment of such a process.

In conclusion, from the investigation of these hominy-holes and the pestles associated with them, the authors believe that here is to be found a unique method of grinding by percussion, using a bell-shaped pestle, point downward, in the hominy-hole. So far as is known no such method of grinding has been previously reported from outside the tributaries of the Green river. Whether or not this method of grinding may be one of the distinguishing characteristics of a distinct culture, or only a local variation of the well-known lap stone mortar, remains yet to be determined.

UNIVERSITY OF KENTUCKY,
LEXINGTON, KENTUCKY

KINSHIP ORIGINS IN THE LIGHT OF SOME DISTRIBUTIONS [1]

By ALEXANDER LESSER

The Omaha and Crow type-systems of kinship nomenclature have a striking distribution in North America. Attention has been called to some aspects of their distribution by Spier,[2] Lowie,[3] and Gifford[4]; certain points of contrast and similarity of the types were earlier remarked on by Kohler[5] and Rivers.[6] In a previous paper I discussed the distribution of these types among Siouan tribes, and their correlation there with differences in form of social organization, and with some special customs that seemed related to the differences of both kinship and organization.[7] The general distribution of the two types was brought into the discussion at that time only incidentally, to see in how far it would support certain conclusions which the Siouan phenomena implied. Here I want to consider more broadly the implications of the general distributions of these two clear-cut types of kinship terminology; and to summarize the limitations these set on certain interpretations of the systems.

First, as to a definition of what is meant by the Omaha and Crow types. Spier, in his *Distribution of Kinship Systems in North America*, has taken the nomenclature of the cross-cousins as the demarcating feature.[8] This is certainly justifiable for purposes of classification, but from the standpoint here taken, viz., that we

[1] Read at the joint session of the American Anthropological Association and the American Folk-Lore Society, New York, December 29, 1928.

[2] Spier, 73–74.

[3] Lowie, (1) 124–125, 142, 149–159, 173; (2) 236–238; (4) 294–296, 300; (5) 341; and Hopi MS, American Museum of Natural History.

[4] Gifford, (2) 247–255; (5) 187–189.

[5] Kohler, 252, 268–303.

[6] Rivers, (2) 53–54.

[7] Some Aspects of Siouan Kinship. Proceedings of the 23rd International Congress of Americanists.

[8] Spier, 72.

are dealing with "systems," it is necessary to show that the differences found in the nomenclature of the cross-cousins are indicative functions of genuinely systematic differences. Personally I think that in this case they are, so that rather than dwell on the cross-cousin terminology itself, I shall attempt to define briefly the systematic features which are at the basis of the cousin terminology.

In both the Omaha and Crow types,[9] as they occur among Siouan tribes, parallel cousins are siblings: that is, the children of two brothers, or of two sisters, are "brothers" and "sisters" to each other. This is the familiar Dakota principle, undoubtedly related to levirate and sororate marriage. Not so the children of brother and sister; in both Omaha and Crow types these are radically distinguished.

In the Omaha case the distinction flows from a conceptual identification of the father's sister, the female ego, and the brother's daughter, as "sisters." This identity does not appear terminologically in the system as actually used by the Omaha and related groups:[10] ego, a female, actually calls by "sister" terms only her elder and younger sisters and parallel female cousins; and there are special terms for father's sister or "aunt," and brother's daughter or "niece." Nevertheless, the extensions of the system both in consanguinities and affinities make it clear that to ego a female, both the father's sister and brother's daughter *function* as "sisters." Whether this implies that the identity of functioning is later than the systematic nomenclature is beside the present point. That there is such actual identification is reinforced by the known presence of the custom of wife's-brother's-daughter marriage, an extension of the more common sororate marriage, which equates the "niece" with her "aunt," or better, with her "aunt's" sister. Logically it is this identification or kinship equality of "aunt" and "niece" which illuminates the other features of the system. On the father's side, since the father's sister

[9] For the sake of brevity I have attempted here to define these systems by their essential features, and have avoided details so far as possible; these were discussed more fully in *Some Aspects of Siouan Kinship*.

[10] But see the system of the Vandau of Portuguese Southeast Africa. Boas, 44

is a "sister" to ego a female, ego's cross-cousins become as a sister's children: thus they are her "sons" and "daughters"; in the same way, to ego a male the cross-cousins on the father's side become as a sister's children, or "nephews" and "nieces." On the mother's side, which merely reverses the relationship, since the mother's brother's daughter is a "sister" to ego's mother, she is a "mother" to ego, following the usual classificatory extensions of the Dakota type; and in this way the brother of that "mother" is a "mother's brother" to ego, viz., he holds the same relation to ego that his father did. It is in this way that "uncle-hood" to ego descends indefinitely in the male line from the mother's brother: the grouping of the mother's brother and all his male descendants through males in one term seems logically to be a function of the kinship equality of a woman, her father's sister, and her brother's daughter.

In Crow kinship the features which define the type are the exact converse of the Omaha features: not only can they be referred to the converse identification of "uncle" and "nephew," but the system as in use among the Crow and Hidatsa actually identifies these terminologically: the mother's brother is an "elder brother" and the sister's son a "younger brother." Thus on the mother's side, since the mother's brother is a "brother," the cross-cousins become for both ego male and ego female, as a brother's children, in this case "sons" and "daughters" to ego regardless of ego's sex. On the father's side, by reversing the relationship, since the father's sister's son is a "brother" to ego's father, he is a "father" to ego, following the usual classificatory extensions of the Dakota type; and in this way the sister of that "father" is a "father's sister" or "aunt" to ego, viz., she holds the same relation to ego that her mother did. Thus in the Crow type "aunt-hood" to ego descends ad infinitum in the female line from the father's sister; and it seems to me that the grouping in one term of the father's sister and all her female descendants through females is logically a function of the kinship identification of a man, his mother's brother, and his sister's son.

The distribution of the Omaha type in North America in-

cludes:[11] among Siouan tribes the Winnebago, the Thegiha group of Omaha, Ponka, Osage, Kansa, and Quapaw, and the Tciwere group of Iowa, Oto, and Missouri;[12] the Yuchi;[13] the Shawnee, and of the central Algonquian tribes: the Menomini, Sauk and Fox, Kickapoo, Potawatomie, and the Miami group of Miami, Peoria, Kaskaskia, Piankashaw, and Wea.[14] In central California the Omaha system occurs for Miwok, Pomo, Wintun, and Yokuts tribes over a continuous area centering around the Miwok.[15] Outside of North America the Omaha type-system appears to be present among the Nandi of East Africa,[16] and several Bantu groups of Southeast Africa.[17] For lack of adequate data on intervening groups, I prefer to consider these African cases as forming one area in relation to the argument. Geographically, then, we have two American areas for the Omaha type, a Plains-Woodlands and a Californian, and an African.

---

[11] Summarized, Spier, 73; I have added the Yuchi and the Potawatomie.

[12] Morgan, (2) 293–382, nos. 18–24; Radin, 128–134; J. O. Dorsey, (1) 252–255; Fletcher, 313–318; Skinner, (6) 735-738, 766–769; author's field notes on kinship of Osage, Kansa, Quapaw, Winnebago, Iowa.

[13] G. Wagner, field notes.

[14] Morgan, op. cit., nos. 45–52, 54, 55; Skinner, (5) 32–34; W. Jones; L. Bloomfield, MS of Menomini terms; personal information from Dr. T. Michelson; author's field notes on kinship of Sauk and Fox, Kickapoo, Piankashaw, Potawatomie, Shawnee.

[15] Miwok groups: Southern, Central, Northern, Lake; Pomo groups: Southeastern, Eastern, Central, Northern, Southwestern; Wintun groups: Southeastern, Southwestern, Central, Northern; Yokuts groups: Tachi, Gashowu, Chuckchansi. Gifford, (2) 81–111.

[16] Hollis, 92–94.

[17] Junod, 1:223–274, and tables, 1:496–503 (Thonga, Tonga, Chopi); Boas (Vandau of Portugese Southeast Africa).

The Thonga case deserves brief comment. The Omaha features appear to a striking extent, but in affinity extensions there are conflicting characteristics apparently related to husband's-sister's-son marriage, which we should expect with the Crow type (see below), and even to cross-cousin marriage. These complications do not appear in the schedule for the neighboring Chopi, or in the case of the Vandau.

The Vandau system is definitely of the Omaha type: the father's sister and brother's daughter are termed "sisters"; paralleling for the Omaha type the Crow variant of the Crow type. The mother's brother and his male descendants in the male line are grouped by one term, in this case the "grandfather" term; which parallels the Choctaw, Chickasaw, Creek variation of the Crow type, where it is the "grandmother" term rather than the special "father's sister" term of the Crow, which groups the father's sister and all her female descendants through females.

The Crow system, judging from the presence of essential features, appears in North America[18] for the Crow, Hidatsa, and Mandan;[19] the Tlingit and Haida;[20] the Southern Pomo and Wappo;[21] the Hopi, Zuñi, Tanoan Hano, and Keresan Laguna;[22] and the Choctaw, Chickasaw, Creek, Cherokee, and Timucua.[23] Outside North America the system appears in the Banks islands, Melanesia.[24] Geographically we can refer this distribution to six areas: in North America a Plains, a Northwest, a Californian, a Southwest, and a Southeast, and outside America, a Melanesian.

These distribution phenomena are interesting, first of all, from the standpoint of interpretation on the basis of independent origin and diffusion. Obviously the appearance of the Omaha type in at least three independent areas, and the Crow type in six—or, allowing for relations between Southeast and Southwest, and between Caddoan tribes and the Hidatsa, in four—makes it rather inevitable that these systems have originated independently a number of times. On the other hand, the distribution of the types *within* the areas enumerated points just as certainly to diffusion within the area as the explanatory principle. This is rather striking commentary on the fact that these two types of explanation are not contradictory and mutually exclusive, but rather are *functional aspects of distributional phenomena*. It is only after boundaries have been drawn that opposition between independent origin and diffusion is of methodological consequence, and then only in relation to the boundaries or limits set up.

The fact is, then, that in any one of the independent areas enumerated for these type-systems of kinship, there has been

[18] Summarized, Spier, 73–74; I have omitted the Yuchi, who have an Omaha system, and the Pawnee, because of conflicting features, and have added the Zuñi.

[19] Morgan, (2) 293–382, nos. 25–27; Lowie, (7) 11–15, 26–42, 56–74; Lowie, (8) 207–212.

[20] Swanton, (1) 62–66; Swanton, (5) 424–426; Durloch.

[21] Gifford, (2) 113–118.

[22] Lowie, MS on Hopi kinship, American Museum of Natural History; Kroeber, (4) 51–83; Freire-Marreco; Parsons, (2) 147–171.

[23] Morgan, op. cit., nos. 28–33; Swanton, (7) 80–91; Swanton, (3) 362–371; Swanton, (8).

[24] Rivers, (1) 1:20–50, especially 26–32.

diffusion within the area; but, on the other hand, the system must have originated therein at least once, and independently of the other areas wherein it appears. This consideration opens the way to an attempt to delineate some correlates of these kinship systems which may be causes of the original appearance of the system in an isolated area.

Two apparent extremes have in modern times been taken on the determinants of kinship terminologies. Rivers has stressed rigorous causation through sociological factors;[25] while Kroeber early denied that such influences were paramount and maintained that kinship terms were linguistic and psychological phenomena, to be understood in the light of certain basic categories or distinctions.[26] I think re-examination of these positions will show that they are not unalterably opposed on essentials. Rivers considered as sociological factors forms of marriage, special functions of specific relatives, and in general, forms of social organization. A form of marriage, as for example that between a man and his mother's brother's wife, can be viewed from two angles: the social angle, as the obligation that a man marry his uncle's wife on the death of his uncle, or the psychic angle, that a man and his nephew are equated kin, viz., that they are psychologically identified as equally close in relationship. This is not stretching a point, for, given matrilocal residence, a man and his sister's son are of the same household. Kroeber, in his analysis of Zuñi terminology, has urged the importance of absolute age-differences as a factor which seems to override other logical principles of Zuñi kinship.[27] Certainly age can be held to be either a sociological or psychological factor. Elsewhere in the same treatment Professor Kroeber discusses Lowie's correlation of Hopi kinship features with clan exogamy, and emphasizes that unilaterality of descent is a preferable explanation.[28] Kroeber further says: "The basic condition would thus be that in which a woman would be felt to be a very different thing from a man in relationship."[28] If I understand Professor Kroeber's meaning, his

[25] Rivers, (2).
[26] Kroeber, (2); Kroeber, (1) 385–396.
[27] Kroeber, (4) 53, 55, 59, 79. [28] Kroeber, (4) 86.

intention is to make this psychologic distinction basic to the principle of unilateral descent. But, on the other hand, interpreting unilateral descent as a sociological factor could hardly be denied legitimacy.

It seems to me, therefore, that the chief difference between these interpretations is one of emphasis. Rivers in his emphasis is primarily insisting that psychological identifications follow, or follow from, customary identifications in behavior patterns,[29] while Professor Kroeber is emphasizing that psychological identifications are processes which precede the formation of behavior patterns. I doubt that either Rivers or Professor Kroeber means to deny that both situations have occurred: that actually there is an interaction, so that behavior may lead thought in a certain direction, and in the same way that thought may direct behavior.

Since such an interaction is psychologically probable, the emphasis on either aspect as causal or basic to the exclusion of the other, is likely to become a more or less subjective interpretation; for in any given case it is practically impossible to demonstrate that either the psychic or social aspect has actually preceded the other in time. In the remarks that follow reference at a given point to the social or psychological aspect of a relation should be understood as a matter of convenience of reference.

In the light of the distributions enumerated, determinants of the Omaha and Crow systems can be sought by identifying their interrelations in a given area with other aspects of social life; and by examination of in how far these re-occur in other areas of distribution of the system. Interrelation in one area cannot establish causal connection by itself; but if this interrelation occurs elsewhere independently, it becomes probable that a functional relation is present which can be used as a working hypothesis.

Among Siouan tribes correlates of the Omaha and Crow systems are apparent.[30]

---

[29] See for example, Rivers, (2) 10, 24, 92.

[30] In *Some Aspects of Siouan Kinship* I discussed these systems among the Siouan tribes in relation to the apparently correlated organization and customs, and attempted to show on the basis of the internal evidence of the systems, that there was a functional relation between customs, organization, and kinship systems.

The Omaha type-system in its distribution coincides with the area of the chief type of Siouan social organization: that of a division of the tribe into two exogamous moieties, each with subsidiary gentes and sub-gentes,[31] with descent in the paternal line.[32] The Siouan tribes with such organization include the Winnebago, the Central and Southern Siouans; for the Quapaw, Oto, Iowa, and Missouri the exact nomenclature of the dual divisions has been lost, but it is probable that these groups paralleled their immediate Siouan congeners in this feature. Post-marital residence is specifically stated to be patrilocal for the Omaha, Ponka, and Iowa;[33] while there are suggestions of what may be matrilocal residence for the Osage and Kansa,[34] but these may refer to the temporary matrilocal residence with more permanent patrilocal emphasis which is reported for the Winnebago.[35] Only Speck's evidence would deliberately contradict this possibility.[36] Wife's-brother's-daughter marriage as a general custom is noted for the Winnebago, Omaha, and Ponka.[37] This marriage seems highly probable for the other groups in this Siouan distribution; information is nowhere negative, but absent.

The distribution of the Omaha type-system, as we saw, includes in the Plains-Woodlands area the Central Algonquian tribes and the Shawnee. All of these tribes, viz., the Sauk and Fox, Kickapoo, Potawatomie, Menomini, and the Miami group, as well as the Shawnee, are organized into exogamous gentes, with

---

[31] Radin, 181–190; J. O. Dorsey, (1) 219 ff., 255–257; J. O. Dorsey, (2) 213–215, 226–241; Fletcher, 41–69; Skinner, (2) 193–195; Skinner, (6) 683, 728–735, 762–766, 799–800; La Flesche, 127.

[32] Radin, 185, 192; J. O. Dorsey, (1) 325; Fletcher, 139, 325; Skinner, (6) 799; Skinner, (2) 193.

[33] J. O. Dorsey, (1) 259–261; Fletcher, 324–325; Skinner, (2) 251; Skinner, (6) 738–739.

[34] Speck, (3) 167–168; La Flesche, 129–130; J. O. Dorsey, (2) 232; Skinner, (6) 771.

[35] Radin, 138–139.

[36] Speck, op. cit., claims that the Osage husband upon marriage succeeds at once to the place of his father-in-law as head of the family, and takes over the property of his parents-in-law.

[37] Radin, 138; J. O. Dorsey, (1) 255, 261; J. O. Dorsey, (2) 244; Fletcher, 326; author's field notes on Winnebago.

patrilineal descent.[38] The Sauk and Fox, Kickapoo, and Potawatomie, have, independently of the gentes organization, a dual division of the community, which while it suggests the moiety organization of the Siouan tribes, is among these Algonquian groups a ceremonial division, the White-paint and Black-paint people, without marriage functions, membership in which is not determined unilaterally by birth; instead the offspring of a family are alternated, the first child, regardless of sex, belonging to the division selected by the child's father, the second child then necessarily becoming a member of the other division.[39] Residence among the Sauk, Fox, and Kickapoo is in general a matter of choice on the part of the couple, after temporary service of the groom with his wife's parents; if there is a preference or emphasis, it is toward patrilocal residence.[40] The Menomini and Potawatomie are apparently definitely patrilocal.[41] Wife's-brother's-daughter marriage occurs often among the Sauk and Fox, and Kickapoo;[42] information is lacking for the other tribes.

The Yuchi, with an Omaha system, are apparently an exception, as they are organized into about twenty clans, which are exogamic, and in which membership is traced matrilineally.[43] However, we know with reasonable certainty, from linguistic and other evidence, that the Yuchi in relatively recent times were in closer contact with Siouan tribes farther north. They have today two men's societies, of great importance in their social organization, which include all the men of the tribe, and in which membership descends strictly from father to son.[44] There can be

[38] *Sauk and Fox:* Skinner, (4) 11–14; Hewitt in Hodge, 2: 478; Forsyth in Blair, 2: 210; Jones in Hodge, 1: 473; Michelson, 691. *Kickapoo:* W. Jones, 335; Jones in Hodge, 1: 685. *Potawatomie:* Morgan, (1) 171; Mooney and Hewitt in Hodge, 2: 291. *Menomini:* Hoffman, 39–44; Skinner, (5) 8–19; Skinner, (1) 563; Skinner, (3) 46–49. *Miami:* Morgan, (1) 172. *Shawnee:* Drake, (2) 17–19; Morgan, (1) 168.

[39] Michelson, 692–693; Marston in Blair, 2: 156; Forsyth in Blair, 2: 193; Drake, (1) 31–32; Skinner, (4) 12; Skinner, (1) 563.

[40] Marston in Blair, 2: 166–167; Forsyth in Blair, 2: 214; Drake, (1) 35; W. Jones, 333.

[41] Skinner, (3) 55; Keating, 1: 111.

[42] Author's field notes.

[43] Speck, (2) 68 ff.

[44] Ibid., 68, 74.

little doubt that the matrilineal emphasis is due to their long association with Muskhogean tribes; there has even been a tendency to take over Creek kinship usages, witness the use of the father's sister term reported by Speck.[45] Post-marital residence among the Yuchi might be either matrilocal or patrilocal; it was patrilocal, or rather the husband's own residence, when he married more than one wife.[46]

Turning to the Crow type-system, in its central or Plains distribution, we find it limited to three Siouan tribes, the Crow, Hidatsa, and Mandan. This coincides with the appearance among Siouan tribes of matrilineal, exogamic organization. The Crow clans are grouped into loose phratries, the Mandan and Hidatsa into moieties.[47] Neither the phratries of the Crow, nor the moieties of the Mandan and Hidatsa, are the primary exogamic groups; but in all three tribes the clan is the marriage-regulating unit.[48] Post-marital residence is stated for the Hidatsa as definitely matrilocal, especially "if the husband is a young man taking his first wife."[49] Lowie, however, says this matrilocal residence was a temporary arrangement and claims there was no absolute rule.[50] The Mandan were matrilocal, although such matrilocal residence might cease later in married life when the husband was in a position to establish his own home.[51] Residence among the Crow is apparently patrilocal for a short time after marriage.[52] As regards special marriage uses, it would seem logical that we should find correlated with the presence of the kinship-type which is converse to the Omaha, a converse type of marriage to that of the wife's-brother's-daughter. This would be marriage to the husband's sister's-son. We have no specific information on the presence or absence of such marriage among the Mandan, Hidatsa, and Crow, but as I have elsewhere remarked, the functioning of husband's-

[45] Ibid., 69.
[46] Ibid., 95–96.
[47] Lowie, (8) 186–189; Lowie, (7) 53, 9–11, 19–21.
[48] Lowie, (8) 193–196; Lowie, (7) 53, 8, 21.
[49] Matthews, 52.
[50] Lowie, (7) 46.
[51] Wied, 349, 351.
[52] Lowie, (8) 223.

sister's-son marriage would be obscured among these tribes by the fact that a man and his sister's son are actually "brothers" terminologically; hence this type of marriage would be apparently only junior levirate marriage. Levirate actually occurs for these tribes.[53] Furthermore, husband's-sister's-son marriage has been specifically mentioned for the Skidi Pawnee,[54] who, as elsewhere noted, have a Crow type-system complicated by other features. It may be through the mediacy of the Arikara, an offshoot of the Skidi Pawnee, that the Crow type-system itself has reached the Hidatsa, in which case it would not be unlikely that husband's-sister's-son marriage has diffused along with it.

It seems to me, on the basis of these distributions in the Plains and Woodlands, that we have a strong case for correlation, on the one hand of the Omaha type kinship system with patrilineal, exogamic organization, patrilocal residence, and wife's-brother's-daughter marriage, and on the other, of the Crow type system of kinship with matrilineal, exogamic organization, matrilocal residence, and possibly husband's-sister's-son marriage. It is of importance, then, to note for other areas of distribution of these types, what form of social organization, what emphasis in descent and residence, and what special forms of marriage appear.

In the Californian area of the Omaha type, six of the groups with the kinship system are organized into exogamic moieties, mainly those in the center of the area. These are the Central, Southern, and Northern Miwok, and the Tachi, Gashowu, and Chuckchansi.[55] All of these groups reckoned descent patrilineally. Of the other Californian groups with the kinship system, the Wintun are patrilineal,[56] while descent among the Pomo tribes is veiled in some contradictions. We have statements of a patrilineal emphasis in the succession to the chieftaincy, in family ties within the household, in the handing down of names, and in land inheritance.[57] On the other hand, we have flatly contradictory

[53] Lowie, (7) 47, 74.

[54] G. A. Dorsey, 73–74.

[55] Gifford, (3) 292, 293; Gifford, (5) 139–140; Gifford, (4) 389; Gifford, (2) 250–252; Merriam; Kroeber, (3) 453, 593; Powers, 352, 371.

[56] McKern, 238.

[57] Kroeber, (3) 251; Gifford, (1) 298, 304; Gifford, (1) 379; Gifford, (6) 83–84.

statements, making the emphasis, particularly in the succession to the chieftaincy, and inheritance of names, matrilineal.[58] Perhaps a fair summary of the situation would be that chieftainship was preferably hereditary in the male line, but limited by the actual availability of the candidate. Furthermore since chiefs would probably be to some extent included in the group mentioned by Loeb as usually marrying outside of the village,[59] the matrilocal residence which seems indisputably in vogue for intervillage unions[60] would seem to imply that the chief's successor be chosen from relatives in his own village, in this way, in many cases, from his sister's children. In the matter of residence rules after marriage, the Miwok are patrilocal, the Wintun temporarily matrilocal but more permanently patrilocal, while the Yokuts tribes are apparently matrilocal.[61] In the case of the Pomo, Kroeber and Loeb make the locality of residence a matter of choice on the part of the couple,[62] while Gifford demonstrates clearly that the native theory, which favors patrilocal residence, is substantiated for intra-village marriages by the composition of households, but that intervillage marriages are predominantly matrilocal.[63] Finally, wife's-brother's-daughter marriage has been established for the Miwok,[64] although it is there complicated by a more recent development from it of cross-cousin marriage. In addition to the Central Miwok case, wife's-brother's-daughter marriage has been enumerated for only three other Californian groups with the Omaha type-system, the Southeastern Pomo, Central Pomo, and Northern Pomo.[65] The evidence for this marriage from other groups seems nowhere negative, but absent.

In the African area of the Omaha type, the Nandi are organized in exogamic gentes, descent and inheritance are patrilineal, and

---

[58] Barrett, 15; Gifford, (1) 336–337, 339, 340–341, 343–346; Loeb, 235, 238, 245, 258, 265.

[59] Loeb, 279.

[60] Gifford, (1) 323.

[61] Gifford, (4) 390; Powers, 354, 238; McKern, 238; Kroeber, (3) 493; Powers, 382.

[62] Kroeber, (3) 255; Loeb, 279, 283.

[63] Gifford, (1) 321, 323, 302–303.

[64] Gifford, (5) 182 ff.

[65] Gifford, (2) 247.

post-marital residence is patrilocal.[66] There are no statements specifically of wife's-brother's-daughter marriage. In Southeast Africa the Thonga tribes are organized in patrilineal, exogamic gentes, and residence after marriage is patrilocal.[67] Wife's-brother's-daughter marriage is customary among Thonga, Tonga, and Chopi.[68] The Vandau are organized in patrilineal, exogamic sibs, and post-marital residence is patrilocal.[69] For the Vandau there is no specific statement of wife's-brother's-daughter marriage, but the situation here is parallel to the case of the Crow, viz., since a woman's brother's daughter is terminologically her "sister," wife's-brother's-daughter marriage would be apparently only sororate marriage. Such sororate marriage occurs among the Vandau, on the death of the wife.[69]

Summing up the facts of this distribution, it would appear that the most consistent correlate of the Omaha system is unilateral descent in the male line: except for the Pomo and Yuchi cases, this correlate would hold universally. Exogamic organization appears very widely as a correlate; it is universal in two of the three areas, and strongly developed in the third, where, however, about half of the groups with the kinship system, viz., the Pomo and Wintun groups particularly, lack exogamy. Post-marital residence is predominantly patrilocal; the chief exceptions are the Yokuts tribes, the Pomo in their intervillage marriages, and possibly the Osage. In general, though, it should be said that the information on residence rules is rather uneven, so that it is hard to weight this factor. Finally, marriage to the wife's-brother's-daughter appears widely in all three areas; for the Plains and California areas, notably at the probable centers of cultural influence. This marriage would probably appear more widespread with more specific information.

Extending our survey of the distribution of the Crow kinship-type for the appearance of correlated traits, we find that in the Northwest area the Tlingit and Haida are both organized into two

[66] Hollis, 4–6, 60–64, 72–73.
[67] Junod, 1: 14 ff., 112–113, 121, 356 ff.
[68] Ibid., 228, 290–292.
[69] Boas, 49.

exogamic moieties, or as Swanton calls them "clans," with descent in the maternal line.[70] For the Tlingit, exceptionally, there is a smaller third group which intermarries freely with the two large moieties. Post-marital residence among the Tlingit, is variously stated to be matrilocal at the option of the son-in-law, a matter of free choice on the part of the couple, or patrilocal.[71] Among the Haida, residence is matrilocal during the betrothal of a man;[72] or, as elsewhere stated, a man lives with his wife's parents until the death of his uncle, when he takes possession of his uncle's house and property.[73] Perhaps among both Tlingit and Haida rank and property considerations play considerable part in determining the "choice" of the couple. Among the Haida father's-sister's-daughter, or cross-cousin marriage occurs; and husband's-sister's-son marriage occurs widely among both Tlingit[74] and Haida.[75] This is especially remarked in connection with the succession to chieftainship, whether it be town-chief, family-chief, or household-chief; apparently the normal heir is the sister's son, who inherits the wife together with house, office, and property. It is even claimed that among the Tlingit the nephew is obliged to give up his own wife, if she prefers it under the circumstances, but must marry his uncle's widow, who has a prior claim.[76]

In the Californian area of the Crow type, descent was matrilinear for the Southern Pomo, and probably so for the Wappo.[77] Exogamic organization is absent, and no specific information is available on residence rules and special marriage uses; if we are to judge from the Pomo evidence for other groups, as above outlined, the Southern Pomo are probably matrilocal.

In the Southwest area, all the groups with the Crow type-system, viz., Hopi, Zuñi, Hano, Laguna, are organized basically

---

[70] Swanton, (5) 398 ff., 423; Swanton, (1) 11, 62.

[71] Krause, 220; Dall, 415; Swanton, (5) 428; Knapp and Childe, 83–84.

[72] Swanton, (1) 50–51.

[73] Harrison, 77, 111.

[74] Krause, 221; Veniaminoff in Dall, 416; Knapp and Childe, 60–61; L. F. Jones, 129–130.

[75] Swanton, (6) 332; Swanton, (1) 70; Harrison, 56–57.

[76] Knapp and Childe, 60–61.

[77] Kroeber, (3) 250–251.

in matrilineal, exogamic clans.[78] All emphatically stress matrilocal residence; in fact, house ownership is exclusively in the hands of the women, and the homes are inherited in the female line.[79] However, it should be noted that exceptional cases of patrilocal residence are recorded for Zuñi and Laguna.[80] I find no specific information on the presence or absence of husband's-sister's-son marriage among these groups. This would be the more interesting in view of the reported absence of levirate and sororate marriage among the pueblos.[81] There are suggestions of cross-cousin marriage at Laguna, Zuñi, and Hano,[82] but the evidence in no case rests on recorded marriages. The earlier reference to practise of the marriage among the Hopi villages has since been disproved by Lowie.[83]

In the Southeast, of the groups with the Crow system, the Choctaw and Chickasaw are similarly organized in two exogamous moieties, subdivided into smaller clan groups, with descent in the maternal line.[84] The Creek tribes have a matrilineal clan organization, but it is not the single clan which is always the exogamic unit; nevertheless, as Swanton puts it, no clan is endogamous.[85] In addition, the Creek are divided into two moieties, which seem ceremonial divisions primarily, and do not regulate marriage.[86] The Cherokee are organized into exogamous clans with matrilineal descent.[87] The Timucua probably were organized

[78] Hough, 36–37, 127; Parsons, (1) 284; Stevenson, 291–292; Kroeber, (4) 91 ff.; Freire-Marreco, 269; Parsons, (2) 206. Cf. on Hopi, Lowie, MS., American Museum of Natural History.

[79] Hough, 37, 127; Voth, 245; Stevenson, 291, 293, 305; Kroeber, (4) 89–90; Freire-Marreco, 269; Parsons, (2) 175–176.

[80] Kroeber, (4) 105; Parsons, (2) 176.

[81] Lowie, (1) 149; Kroeber, (4) 90; Parsons, (3) 257; an exceptional occurrence of sororate is mentioned for Laguna. Parsons, (2) 206.

[82] Parsons, (2) 196–197; Kroeber, (4) 67; Freire-Marreco, 286.

[83] Lowie, Hopi MS., American Museum of Natural History, in reference to Freire-Marreco, 286.

[84] Swanton, (2) 60–61; Gatschet, 1: 95–97, 104–105; Swanton, (7) 695; Bushnell, 16; Morgan, (1) 166–167.

[85] Swanton, (4) 594–598; Swanton, (7) 114, 166 ff.; Gatschet, 1: 153–155; Speck, (1) 114–115; MacCauley, 496, 507–508.

[86] Swanton, (7) 156 ff., 165, 167, 695.

[87] Mooney, 212–213; Morgan, (1) 168.

in matrilineal exogamous clans grouped in phratries.[88] Post-marital residence among the Creek, Choctaw, Chickasaw, and Timucua was matrilocal.[89] Apparently patrilocal residence occurred occasionally among the Creek,[90] but the normal mode of residence, as outlined by Swanton, was for the father-in-law to build a home for his daughter near his own residence, and it was to this matrilocal residence that the son-in-law came; it was definitely owned by the wife.[91] I find no specific statements on locality of residence among the Cherokee. In the matter of husband's-sister's-son marriage information for all these Southeastern groups is wanting, although the basic levirate and sororate marriages from which this would be an extension, occur throughout the area.[92]

In the Banks islands, Melanesia, we find correlated with the Crow type-system, an exogamous moiety organization with matrilineal descent, and marriage to the husband's-sister's-son.[93] Here, however, residence is apparently patrilocal throughout the area, so much so that Rivers is led on this basis to deny any relation between matrilocal residence and matrilineal descent.[94]

Summing up this distribution, we find that unilateral descent through the mother is a universal correlate of the Crow type-system of kinship. Exogamic organization occurs as a correlate throughout five of the six areas; it is lacking among the two Californian groups. Post-marital residence is predominantly matrilocal; the chief exception to this generalization would be the anomalous situation in Melanesia. But again the evidence on residence is very uneven. Marriage to the husband's-sister's-son occurs throughout two areas; and it is probably more widespread.

Evidently we can say without question that the Omaha and Crow schemes are associated respectively with unilateral descent through the father and through the mother. While it would seem probable from the evidence that residence rules play a large part

[88] Swanton, (3) 369–371; Swanton, (7) 695; Mooney in Hodge, 2: 753.

[89] Swanton, (7) 79, 170–171, 375; Speck, (1) 117; MacCauley, 495; Bushnell, 27; Cushman, 498; Swanton in Lowie, (6) 31.

[90] Speck, (1) 117.

[91] Swanton, op. cit.

[92] Swanton, (7) 368 ff.

[93] Rivers, (1) 1: 20 ff., especially 48–49.

[94] Ibid., 2: 126.

in producing the descent emphases, the data are not specific enough in all cases to permit adequate analysis of the force of such factors. The question of the weight to be assigned preferential marriages in molding both the kinship and social organization must still remain open, but the facts enumerated seem to me to suggest that they may prove fundamental; this view is the more favorable because we have nowhere in reference to either of these systems a definite statement denying the presence of the marriages which seem reasonable correlates, but merely the absence of comment. I have elsewhere urged that given some emphasis of the order of a specific residence rule, the wife's-brother's-daughter in the case of patrilocal residence, and the husband's-sister's-son in the case of matrilocal residence, are of the same household as the wife and husband respectively;[95] so that it would be a natural extension of sororate and levirate respectively for them to be substituted for the wife's sister or the husband's brother. Whether kinship terminology to express such usages must follow from the custom is another matter. To a great extent this would probably depend on the numerical preponderance of such marriages. It is not enough that a marriage is possible, or that it occurs now and then; if it is to be a determining factor, it must obviously be dominant over other factors of a like order, that is, it must be the preferred or obligatory form of behavior. Granted such conditions, and it is here that our data are most incomplete, I think it would follow that kinship terminology would adjust itself to behavior.

As regards the relation of exogamic groupings to these kinship-types, it would appear from the California evidence on both Omaha and Crow systems, that the kinship schemes appear without organized exogamic structures. This would make it probable that the systems with their descent emphases are favorable conditions to the appearance of definite exogamic organizations, rather than that the full development of the kinship system is a reflection of the social organization.[96] The evidence on the Crow type would favor this interpretation more than that on the Omaha. It is a plausible hypothesis that the kinship systems of Californian groups with Omaha schemes and without exogamic organiza-

[95] See also Lowie's remarks, (3) 40. [96] Lowie, (3) 29.

tions have appeared there as a result of diffusion from the more central groups who have exogamy. In the case of the Southern Pomo and Wappo, however, we have the Crow system without exogamy, in a completely isolated area.

The apparent absence of exogamy in some cases in our distributions is open also to another interpretation. In general we call exogamic groups only such groups as are organized and named: very often this involves adding to our concept of the group, totemic, religious, or ceremonial meanings which may be wholly secondary to the group functions as a sociological unit. Australian data indicate this clearly, where we find in contiguous areas marriage classes identified with totemic groups, as among the Urabunna, or specifically dissociated from them, as among the Arunta.[97] And, taking the matter from another angle, in the case of the Mardudhunera of Western Australia, Brown has shown that while superficially their social organization resembles that of the Kariera as a four-class system, analysis shows that actually there must be groupings of kin present which make it of the eight-class form.[98] Apparently these groups have not attained conscious social recognition, and have not been named. Hence, I should urge that a kinship system, particularly of such types as here discussed, may actually group kin so that sibs are implicit in the social life of the people before they are made explicit.[99] Some principle of naming, diffused perhaps from other groups, may be the immediate determinant of the formal recognition of such groupings.

Concluding, the argument here presented is that the distributions of two types of kinship systems point to their repeated independent origins, and to their diffusions, or the diffusions of their determinants, within limited areas. These types are often correlated with special customs of residence and marriage, with specific descent emphases and with exogamic organization, so that it is possible we are dealing in such cases with a functionally interrelated complex. The evidence seems strong enough to justify

[97] Spencer and Gillen, 59, 60; and 34, 557. [98] Brown, 185–188.

[99] See in this connection, and in reference to the Pomo and Wintun tribes who lack exogamy, McKern; and Loeb, 266, 279, 398–399.

consideration of some causal interrelation of these features as a working hypothesis, and to favor special inquiry for the presence of these features in specific cases. As a specific result, it seems likely that these exogamic organizations have followed the kinship classifications of these types in time, rather than preceded them.

There is no evidence here for conclusions about the origins of exogamic organization in general; save evidence which strengthens the thesis that such organizations have probably originated independently in a variety of ways, of which we have here considered only two. Different cases of social organization may involve different origins, and where it is possible to identify causal complexes which may be related to origins, the outer form of the organization should not be treated in comparisons as an independent cultural unit, divorced from the interrelated features.

PUBLICATIONS REFERRED TO*

BARRETT, S. A. Ethno-geography of the Pomo and neighboring Indians. UCP, 6: 1–332.
BLAIR, E. H. Indian tribes of the upper Mississippi Valley and region of the Great Lakes. 1912. 2 v.
BOAS, F. Das Verwandtschaftssystem der Vandau. Zeit. f. Ethnologie, 54: 41–51.
BROWN, A. R. Three tribes of Western Australia. JRAI, 43: 143–194.
BUSHNELL, D. I. Choctaw of Bayou Lacomb. Bulletin 48 BAE.
CUSHMAN, H. B. History of the Choctaw, Chickasaw and Natchez Indians. 1899.
DALL, W. H. Alaska and its resources. 1870.
DORSEY, G. A. Social organization of the Skidi Pawnee. ProCA, 15. 2: 71–78.
DORSEY, J. O. (1) Omaha sociology. 3rd Annual Report, BAE, 207–380.
(2) Siouan sociology. 15th Annual Report, BAE, 213–244.
DRAKE, B. (1) Life and adventures of Black Hawk. 1846.
(2) Life of Tecumseh and his brother the Prophet. 1858.
DURLOCH, T. M. Relationship systems of the Tlingit, Haida and Tsimshian. Publications of American Ethnological Society, v. 11, 1928.
FLETCHER, A. C. and F. LA FLESCHE. Omaha tribe. 27th Annual Report, BAE, 15–654.

* *Abbreviations:*

AA	American Anthropologist, new series.
BAE	Bureau of American Ethnology.
HAV	Holmes Anniversary Volume, 1916.
MAAA	Memoirs, American Anthropological Association.
PAMNH	Anthropological Papers, American Museum of Natural History.
ProCA	Proceedings of International Congresses of Americanists.
UCP	University of California Publications in American Archaeology and Ethnology.
UPM	University of Pennsylvania, Museum.
JRAI	Journal of the Royal Anthropological Institute.

FREIRE-MARRECO, B. Tewa kinship terms from the pueblo of Hano, Arizona. AA, 16: 269–287.
GATSCHET, A. S. Migration legend of the Creek Indians, 2 v. 1884, 1888.
GIFFORD, E. W. (1) Clear Lake Pomo society. UCP, 18: 287–290.
(2) Californian kinship terminologies. UCP, 81: 1–285.
(3) Dichotomous social organization in south central California. UCP, 11 291–296.
(4) Miwok lineages and the political unit in aboriginal California. AA, 28: 389–401.
(5) Miwok moieties. UCP, 12: 139–194.
(6) Pomo lands on Clear Lake. UCP, 20: 77–92.
HARRISON, C. Ancient warriors of the North Pacific. 1925.
HODGE, F. W., ed. Handbook of the Indians north of Mexico. Bulletin 30, BAE (2 parts).
HOFFMAN, W. J. The Menomini Indians. 14th Annual Report, BAE, 1: 11–308.
HOLLIS, A. C. The Nandi. 1909.
HOUGH, W. The Hopi Indians. 1915.
JONES, L. F. A study of the Thlingets of Alaska. 1914.
JONES, W. Kickapoo ethnological notes. AA, 15: 332–335.
JUNOD, H. A. Life of a South African tribe. 1927. 2 v.
KEATING, W. H. Narrative of an expedition to the source of St. Peter's River. London, 1825. 2 v.
KNAPP, F and R. L. CHILDE. The Thlinkets of southeastern Alaska. 1896.
KOHLER, J. Zur Urgeschichte der Ehe. Zeit. f. vergleichende Rechtswissenschaft, 12: 187–353, 1897.
KRAUSE, A. Die Tlinkit-Indianer. 1885.
KROEBER, A. L. (1) California kinship systems. UCP, 12: 339–396.
(2) Classificatory systems of relationship. JRAI, 39: 77–84.
(3) Handbook of the Indians of California. Bulletin 78, BAE.
(4) Zuñi kin and clan. PAMNH, 18: 39–204.
LA FLESCHE, F. Osage marriage customs. AA, 14: 127–130.
LOEB, E. M. Pomo folkways. UCP, 19: 149–405.
LOWIE, R. H. (1) Culture and ethnology, 1917.
(2) Exogamy and classificatory systems of relationship. AA, 17: 223–239.
(3) Family and sib. AA, 21: 28–40.
(4) Historical and sociological interpretations of kinship terminologies. HAV, 293–300.
(5) Kinship systems of the Crow and Hidatsa. ProCA, 19: 340–343.
(6) Matrilineal complex. UCP, 16: 29–45.
(7) Notes on the social organization and customs of the Mandan, Hidatsa and Crow Indians. PAMNH, 21: 1–99.
(8) Social life of the Crow Indians. PAMNH, 12: 179–248.
MACCAULEY, C. Seminole Indians of Florida. 5th Annual Report, BAE, 471–531.
MATTHEWS, W. Ethnography and philology of the Hidatsa Indians. U. S. Geological and Geographical Survey, misc. pub., 7, 1877.
MERRIAM, C. H. Totemism in California. AA, 10: 558–562.
MCKERN, W. C. Functional families of the Patwin. UCP, 13: 235–258.
MICHELSON, T. Notes on the social organization of the Fox Indians. AA, 15: 691–693.
MOONEY, J. Myths of the Cherokee. 19 Annual Report, BAE, 5–548.

MORGAN, L. H. (1) Ancient society. 1877.
(2) Systems of consanguinity and affinity of the human family. Smithsonian Contributions to Knowledge. 1871.

PARSONS, E. C. (1) Contributions to Hopi history. Oraibi in 1920. AA, 24: 283–294.
(2) Laguna genealogies. PAMNH, 19: 133–282.
(3) Notes on Zuñi. MAAA, 4: 151–327.

POWERS, S. Tribes of California. Smithsonian Contributions to North American Ethnology, v. 3.

RADIN, P. Winnebago tribe. 37th Annual Report, BAE, 35–550.

RIVERS, W. H. R. (1) History of Melanesian society. 1914. 2 v.
(2) Kinship and social organization. 1914.

SKINNER, A. (1) Comparative sketch of the Menomini. AA, 13: 551–565.
(2) Ethnology of the Iowa Indians. Bulletin, Public Museum, City of Milwaukee, 5: 181–354.
(3) Material culture of the Menomini. Indian Notes and Monographs, misc. ser., no. 20.
(4) Observations on the ethnology of the Sauk Indians. Bulletin, Public Museum, City of Milwaukee, 5: 1–57.
(5) Social life and ceremonial bundles of the Menomini Indians. PAMNH, 13: 1–165.
(6) Societies of the Iowa, Kansa and Ponca Indians. PAMNH, 11, 679–801.

SPECK, F. G. (1) Creek Indians of Taskigi town. MAAA, 1: 99–164.
(2) Ethnology of the Yuchi Indians. UPM Anthr. Pub., 1: 1–154.
(3) Notes on the ethnology of the Osage Indians. UPM Transactions, 2: 159–177.

SPENCER, B. and GILLEN, F. J. Native tribes of Central Australia. 1899.

SPIER, L. Distribution of kinship systems in North America. University of Washington Publications in Anthropology, 1: 69–88.

STEVENSON, M. C. Zuñi Indians. 23rd Annual Report, BAE, 5–608.

SWANTON, J. R. (1) Contributions to the ethnology of the Haida. Memoirs of the American Museum of Natural History, 5: 1–300.
(2) An early account of the Choctaw Indians. MAAA, 5: 53–72.
(3) Early history of the Creek Indians and their neighbors. Bulletin 73, BAE.
(4) A foreword on the social organization of the Creek Indians. AA, 14: 593–599.
(5) Social conditions, beliefs and linguistic relationship of the Tlingit Indians. 26th Annual Report, BAE, 391–485.
(6) Social organization of the Haida. ProCA, 13: 327–334.
(7) Social organization and usages of the Indians of the Creek confederacy; *and* Aboriginal culture of the Southeast. 42nd Annual Report, BAE, 23–472; 673–726.
(8) Terms of relationship in Timucua. HAV, 451–463.

VOTH, H. R. Oraibi marriage customs. AA, 2: 238–246.

WIED, Prince zu. A. P. Maximilian. Travels in the interior of North America, translated from the German by H. E. LLOYD. London, 1843.

COLUMBIA UNIVERSITY,
NEW YORK CITY

PREHISTORIC POTTERY PIGMENTS IN THE SOUTHWEST

By FLORENCE M. HAWLEY

Introduction

IN THE prehistoric days of the Southwest, the people fashioned their household articles after patterns handed down from generation to generation; in fact, so conservative were they that each of their different schools of art extended over a comparatively large area. As in historic art, there were developments and changes in each school; these came through the new ideas of some master potter or simply through natural organic growth and decay. When the archaeologist digs up a piece of pottery, his first effort is to classify it according to culture area, then to place it in its chronological sequence. It has long been realized that movements and developments of peoples may well be traced through a study of their pottery; the relative chronology of pottery types and of cultures may be determined through cross finds of whole vessels or even of potsherds that have been traded out of their own areas. Hitherto, only the designs, the colors, and the pastes of pottery have been considered to any extent in this study; I would suggest that the difference in types of prehistoric paints as discovered through simple physical and chemical tests or through more complete analyses presents a field of study offering new discoveries. It has been found that the types of paints used in a given locality were consistent and so provide a dependable basis of comparison with the paints of other wares. Up to the present time there has been little scientific investigation of these American prehistoric paints, though in 1911 Louis Franchet printed a comprehensive study of paints and pottery other than American in *Céramique Primitive*.

For the more comprehensive chemical tests the paint must be removed from the sherds in some way so that little of the sherd itself comes off with the paint. Because of the exceeding thinness

of most paint coatings, such a removal is difficult, and as the simple tests were found to be practical in almost every case, the longer chemical tests need be used for only the manganese paint, for which we have found no shorter test, or as a check if the result of any simple test is doubted. Because the black paint presents a much wider range of differences than the other colors, it has been found to be the most valuable for the study of culture areas and influences. Of the four colors commonly used in pottery decoration —red, white, buff, and black—all but the black are mineral paints. Both vegetal and mineral paints and combinations of the two were used to produce black.

Before one may make a detailed study of the paint materials, something must be understood of the process of making pottery, of the application of the paints, and of the firing. These processes noticeably affect the colors of most of the paints used by both the modern and the ancient Pueblo Indians. That the modern process of preparing the clay probably closely parallels the ancient is indicated by the marked general resemblance in pastes of modern and ancient wares, although in composition the different classes of both the modern and ancient pottery may differ noticeably.

The lower part of a vessel is often molded in a pottery bowl or in a large sherd saved for the purpose, although I have seen pieces of modern Hopi ware that show the unmistakable imprint of a modern pan upon their lower portions; verily the Indian will be civilized! The bases of some pieces of prehistoric ware were molded in baskets; imprints of the rim or of a few coils are occasionally found three or four inches from the base of the vessel. Pottery vessels or sherds were probably used for base molds of other pieces then as now. Upon the clay base the potter builds up the rest of the piece by coiling long ropes or fillets of clay around and around upon themselves. This coiling process, used by the ancient as well as by the modern potters of the Southwest, insures a symmetry rivaling that obtained through the use of the wheel by the early potters of Europe. Hand modeling could scarcely reach such perfection. Vessels in which the coils were not obliterated show that in this type, at least, no base mold was used; the entire piece was built up by coiling.

The coiling leaves the surface rough; the woman smooths it with a small paddle cut from a piece of gourd rind or with a wooden paddle that is slightly larger. In those wares on which no slip was used, as the ancient San Juan massed black-on-white and the modern Hopi, this smoothing is prolonged until a thin emulsion of the finest particles of clay comes to the surface and so fills in the pores that the appearance of a slip is produced. After the smoothing, the Hopi woman allows the pottery to dry somewhat and then rubs it down with a piece of white sandstone. In slipped ware, the slip is now applied and dried, and the vessel is given a final polish with a waterworn pebble; unslipped ware is similarly polished. The woman mixes her pigments in a small stone metate or in a more modern cup and applies them with homemade brushes of yucca fiber. Prehistoric artists used paint slates, tablets, or stone cups as well as metates for grinding and mixing their colors.

After the colors have dried for a few hours, and the modern Hopi finds the oven of the white man's stove most efficient for this process, a number of the completed vessels are stacked and fired in an outdoor oven of slabs of dried sheep dung; the same material was used for fuel. The cracks of the oven are filled with small pieces of the dung, so that a red heat may be obtained, a temperature that will burn the pottery to almost the hardness of porcelain. Firing lasts for only about an hour. Little of the ancient pottery was of as fine clay or as well burned as the modern Hopi ware except for that massed black-on-white ware that is characteristic of the San Juan and particularly of Kitsil and Betatakin ruins in the Segi canyon. Underburning gives a bad color and weakens the vessel; overburning discolors the pigments and the clay. Before the Spaniards brought sheep and cattle into this country wood and perhaps a little coal was used for fuel, and open fires or ovens of stone slabs leaned together must have been used.

Yellow, Red, and White Pigments

The firing changes the colors of many of the pigments and makes them permanent. The white clay that the Hopi use for the walls of their pottery turns to cream or even to buff in firing and

may become orange if overfired. This is due to a slight content of yellow iron oxide in the clay. The yellow ochre, limonite, ($2Fe_2O_3 2H_2O$), is ground and used for the walls of their red ware and for any red designs on the light ware; upon firing, the yellow iron oxide changes to red iron oxide, ($2Fe_2O_3$), with a deep brownish red color. The modern Hopi do not slip their vessels; the high polish produced by patient rubbing with a smooth pebble produces a background which so simulates a slip that it is usually mistaken for one. The same yellow clay was used for the slip of the Little Colorado black-on-red ware, and in a less pure form and color, for the exterior of the Middle Gila polychrome vessels and for the great amount of undecorated red ware found all through the Southwest. Guthe reports that the orange-red slip used on the bases and on the interior of olla lips at New Mexico pueblos is of a mustard yellow shade until fired. This yellow iron oxide burns to a lighter red than that used by the Hopi, and unlike the Hopi, these people use a red iron oxide wash for their dark red slipped decorated ware. Equal amounts of rock temper and white clay are mixed with water and are made into cakes which are dried and stored away. When needed for use, these cakes are broken up and enough is put into water to give it a milky opaque appearance. To this is added an indefinite amount of the red clay, the amount depending upon the shade desired. Stevenson, speaking of the Zuñi, wrote,

> The materials used to produce the red or brown colors is a yellowish impure clay, colored from oxide of iron; indeed it is mainly clay, but contains some sand and a very small amount of carbonate of lime [It] is generally found in a hard, stony condition and is ground in a small stone mortar . . . . and is mixed with water so as to form a thin solution.

The Hopi claim to use no red clays or pigments except for body paints. Oval pats of clay mixed with ground hematite to produce a deep red body paint were found in Turkey Hill ruin, near Flagstaff. The clay was added to give thickness to the paint. These pats had been bored with a transverse hole so that a string might be run through them for suspension.

Dead white or grayish white clays were used for the white paint, and, containing no oxide of iron, did not change color in firing. Stevenson found modern Pueblo Indians using

a fine white calcareous earth, consisting mainly of ground feldspar with a small proportion of mica.

The material used for white paints may have varied somewhat among the tribes but must always have been some mineral free from iron oxides. Kaolin clay was probably the most commonly used.

Black paints have hitherto been the subject of some conjecture. Carbon paints containing no silica would immediately burn off; graphite is much too rare for general use as a paint. The balls of carbon which are occasionally found in ruins were intended for body decoration and not for pottery; such material could not have been made permanently adherent.

In 1903 Hough spoke of the black paint of the Little Colorado region—

the basis of which is iron ore, but the secret of its mixing, whether with alkaline salts or resin, is lost, ...

The present study of black paints, which has thrown some light upon that secret, has been carried on through chemical tests made of the prehistoric paints. The data so secured were correlated with those from similar tests of modern Pueblo pottery paints. The results indicated that in their pottery decoration, as in many other fields, these descendants of the prehistoric peoples have carried on the traditions and customs of their ancestors and that an examination of the materials and of the preparation of the modern paints might be expected to furnish those connecting links of fact that are not apparent in a deductive study. The apparent constancy of a paint type in an area in one or more periods led to an investigation of the relationships between culture areas as indicated by the change in paint areas in different periods.

Types and Tests of Black Pigments

On the basis of tests made the black paints used on prehistoric pottery may be divided into four main classes:

1. Plain carbon similar to soot or lamp black, applied by smudging. (Not a true paint.)
2. Carbon protected by a thin, adherent, transparent film of an easily fusible silicate. This is the vegetal extract paint.

3. Carbon protected by the silicate, with the addition of red iron oxide (Fe_2O_3), or yellow iron oxide) $2Fe_2O_3 2H_2O$), which burns to Fe_2O_3.
4. Paint containing chiefly some manganese oxide, (MnO_2), (Mn_3O_4), or (MnOOH).

Type 1. *Smudge.*—For some years it was thought that those vessels showing a satiny black interior had been treated with a glaze paint and that those with rough, dull black interiors had been covered with dull paint. Test 1 indicates that these pieces were smudged black by the same method as that used by the women of San Ildefonso. After the vessel is fired it is filled with smoldering organic material and kept warm upon the coals. This treatment deposited carbon around the particles of clay of the slip or of the polished surface where there was no slip. In some cases the darkened film of clay is thin; with longer subjection to the smoldering matter, carbon was driven halfway through, or, rarely, entirely through the walls of the vessel. The dull or shiny appearance of the finished surface is due to the relative amounts of polishing the surface receives before firing.

Cushing describes a slightly different process which would produce the same smudged effect. Vessels

> while still hot from a preliminary burning, if coated externally with the mucilaginous juice of green cactus, internally with pinon gum or pitch, and fired a second or even a third time with resinous wood-fuel, are rendered absolutely fire-proof, semi-glazed with a black gloss inside, and wonderfully durable.

The gum and juice when heated in a slow fire would deposit carbon around the clay particles of the slip just as when the vessel was filled with organic material and heated.

In an open draft muffle or with an oxygen torch, heat the sherd to redness and maintain that approximate temperature for two or three minutes. If the torch is used, the flame must be moved over the sherd so that plenty of oxygen may reach the surface. Carbon deposited by smudging will burn out, leaving the clay its original color. The depth to which the carbon has penetrated will determine the length of time it will require for burning out.

Paint which is purely vegetal in composition and which has not burned onto the pottery would also burn off, but such paints

are very rare, the black paint used by the modern Pima and Papago being the only type I have found to burn off, and some of these people claim that they use the commercial paint. Differentiation between paints and smudges in such cases is not difficult. Smudges can only be applied in large undefined areas or over an entire surface; only paints may be applied in areas decorated with designs. An examination of a cross-section of the wall of the vessel will indicate whether smudge, which penetrates the wall, or paint, which scarcely sinks into the surface has been used. In testing, the temperature to which a sherd is subjected must not be high enough for the surface to become fused.

If the black paint gives no reaction to test 1, it should be tested for type 2 or 3 paint.

Types 2 and 3 (Carbon; Carbon and Iron).—The carbon paint of type 2 was applied as a vegetal extract. Type 3 consisted of a similar solution, to which was added iron oxide. In both types the carbon was protected by a silica film or incipient glaze.

The silica film of these types of paint must not be confused with any heavy glaze which covers the surface of a pigment. It is rather a very thin coating which surrounds individual particles or groups of particles of carbon and which, in testing, must be removed by treatment with hydrofluoric acid before the carbon may be burned out. This film protected their paint during firing. Occasionally a white crystallization of the glaze material may be seen along the edges of bands of black paint.

In a study of prehistoric paints, it is obvious that although the physical and chemical properties of the paints used might be ascertained, there is no possible way of discovering how the paints were prepared, or, in the case of black paint, in what form the carbon was applied. After proving by test, however, that the black paint of the Hopi corresponds exactly to type 3 of the prehistoric paints, a collection of Hopi paint materials was made, together with information concerning their preparation. It will be noted that the only difference between paints of types 2 and 3 is the presence of iron oxide in the latter. Thus, a study of Hopi black paint before the iron oxide is added may be expected to explain type 2.

Walpi and Hano on the First Mesa are the only Hopi pueblos in which pottery is made. Some of the specimens of paint ingredients obtained came from Humisi of Walpi; the others, and corroborative evidence concerning their preparation, were given by Nampeo, most famous potter of Hano. Humisi is Hopi; Nampeo is Tewa, but the methods of their art are exactly alike.

A small bushy plant of the genus *Sophia*, one of the Mustard family, springs up on the Hopi reservation in the fall, grows to about eight inches high during the winter, breaks into yellow blossoms in the spring, and dies in April. The women pull up the little plants about March, dry them, and store them for the future. When black paint is to be made, the plants are boiled in water for several hours, the fibrous parts are removed, and the solution is again boiled until it becomes black, thick, and syrupy. The thick fluid is poured into corn husks to dry and harden. Several days are required for this hardening, but the Zuñi, who use the Guaco or Bee plant, *Cleome serrulata* or *integrefolia*, prepare it similarly, and claim that the paint is better if left to harden for several months before using. Some Zuñi boil their liquid several times so that it is quite thick when it is poured out on a board to dry in the sun. The hard cakes so produced may be kept for an indefinite period.

A small amount of this hard black material, "no matter how small," they assured me, is dissolved in a little water on a tiny metate or in a stone paint grinder. Both Hopi and Zuñi rub a small block of hematite over the stone until enough iron oxide is ground off to make the solution about as thick as gravy. The paint is applied to the pottery with brushes made by shredding out the fibers of one end of a piece of yucca leaf about three inches long. Brushes vary in thickness according to the size of the line for which they are intended.

Different species of the *Cleome* and of the Mustard are common throughout the Southwest and were probably used where those mentioned here were not indigenous.

In considering paint of type 2, the analysis would be of only the plant extract, for the paint consisted of this dissolved in water with no addition of other matter. The extract analyzed as follows:

Volatile and combustible	71.5%
Ash	28.5%

The volatile matter consists of various combinations of carbon, hydrogen, oxygen, and nitrogen.

Partial analysis of ash:

Silica (SiO_2)	8.2%
Alumina (AlO_3)	4.2
Iron oxide (Fe_2O_3)	7.2
Lime (CaO)	9.5
Magnesia (MgO)	1.1
Alkalies (K_2O) and (Na_2O)	32.5

Considerable of carbon dioxide, (CO_2) combined with the alkalies and the lime is also present.

The chemical analyses given in this paper were done by F. G. Hawley, Chief Chemist of the International Smelter, Miami, Arizona. Mr. Hawley is likewise responsible for some of the tests which are here given.

It is apparent that this vegetal extract contains two widely different substances, the carbonaceous matter, which is composed principally of carbon and hydrogen and thus obviously entirely combustible, and the mineral matter which burns to ash. The principal constituents of this ash are sodium carbonate and potassium carbonate; both are alkalies which act alike in these paint reactions. Minor constituents of the ash are silica and lime.

Alkali carbonates are among the few mineral substances that will melt at a fairly low temperature. The pottery clay is predominantly silica and contains a little soluble alkali. In type 3, the iron oxide contains silica as an impurity, which being finely ground, is easily available. The silicates and the carbonates melt to form a silicate film over the carbon, a film too thin to actually warrant being called a glaze. It is transparent and leaves the black appearance of the carbon, which will not be burned out if the vessel is kept surrounded with burning fuel which will exclude the oxygen during the time the film flows over and around those particles.

If this vegetal paint is heated in air, all of the carbonaceous matter burns out, but when oxygen is excluded, the hydrogen

combined with a definite amount of the carbon volatilizes; the rest of the carbon is left as a black residue, which, after it is protected by the silicate film, will not burn off even with excess air. The only exception is the occasional slow burning off of carbon when oxygen diffuses through the film. This, in type 3, leaves a reddish brown color from the iron oxide residue. Black-on-white ware is sometimes found with the paint black on one side of the vessel and burned to a light brown on the other. Occasionally a vessel is seen in which all of the paint has been burned to red brown. In the firing process, the film of fusible silicate aids considerably in sintering the carbon or the carbon and iron oxide of the paint to the slip and so prevents any possible washing or rubbing off. Red iron oxide paints also contain silica and alkalies and so in firing sinter to the clay of the vessel and become permanent, but white paint, which contains only a trace of alkalies, is sometimes easily removed.

Test 2

With a platinum or a glass rod or even with a splinter of wood, apply a drop of hydrofluoric acid (HF) to a cold sherd and allow it to trickle across the paint. If the acid is absorbed before the end of ten seconds, apply a second drop in the same place and in similar manner. In from 30 to 45 seconds or after the acid is all dried or absorbed, place the piece in an open draft muffle and ignite to a red heat for about five minutes. Remove from the muffle and examine when cold; the color changes in cooling. If an oxygen torch is being used for the tests, do not heat the sherd while even slightly damp, for the heated acid will give the pottery a reddish brown tint that makes accurate observations impossible. Applying the acid to a warm sherd is to be avoided for the same reason. If the paint tested was composed of carbon protected with a thin layer of silicate, type 2, the acid will have liberated the carbon from the silica, and the black will have burned entirely off or will have left only a shadowy gray streak. The gray may be due to the paint which penetrated the surface and so has not been affected by the heat or acid.

Test 2 is practical for common use in distinguishing carbon

paints of type 2, but for a final test for carbon in any doubtful paint, a chemical test using an asperator may be resorted to.

Hydrofluoric acid is an almost universal solvent, but it will not attack carbon. When applied to the pottery, it would, if strong enough and left for enough time, dissolve not only the silica film of the paint, but also any iron oxide in the paint or slip, and even the whole sherd. Hence, it is necessary to limit the amount used and the time it is allowed to be in contact with the paint. Practice rather than any rule is the only way of obtaining good results, especially on new types of pottery. Used as directed, the HF attacks the fine clay of the surface and dissolves it so that it may be easily washed or rubbed off. The necessary limiting of HF will frequently prevent its action on paint that has penetrated below the surface.

Test 3. Iron and Carbon

If the paint is composed of carbon and iron oxide, protected by the silica film, the carbon will be burned out by test 2, but the iron will be left as a reddish brown stain on the surface.

Porous ware will quickly absorb the acid, so that two applications are often necessary. Some surfaces, as that of the Kayenta polychrome, are quickly eaten away by the acid, so that nothing is left to be tested. In treating these, the acid must be made to trickle across quickly and drop off at the side or be washed off with a light jet of water. Hard surfaces and thick paint coats, especially those of the black-on-red wares, require long acid treatment, ranging from two to six applications. Should there be oil on the sherd in amounts enough to prevent the HF from wetting it, the oil should be driven off through gentle heating.

Although this test is simple and gives good results on black-on-white wares, it sometimes fails on black-on-red. If the black paint of a red sherd gives no reaction to test 3, it is probably due to one of two causes. The paint may be of type 4, containing manganese, which must be determined through other chemical tests, or the red iron oxide of type 3 paint may have been changed to black iron oxide, or magnetite, during the original firing of the vessel. Magnetite remains on the sherd after the carbon has been burned

out, but as it is black in itself, we cannot determine whether the paint contains the black iron oxide or the magnetite until it is chemically tested. The polychrome of the Kayenta region is the only ware so far discovered to be decorated with paint consisting principally of manganese oxide, although some others have been found to contain some manganese as an impurity in the red iron oxide paint.

For a final test for iron and for the manganese test the paint must be removed from the sherds by acid.

Select a sherd on which there is a 1/4 to 1/2 inch mass of black paint. Warm slightly. Moisten with two or three drops equal parts HF and HCl and leave for one or two minutes. Add one or two drops more of HCl. This will have loosened the paint so that it may be rinsed into a porcelain dish. Rub the remaining streak of disintegrated paint with a glass rod to loosen the particles still adhering and rinse into the same dish. Keep amount of water used at a minimum.

Test 3a. Iron

To the paint removed by the above method, add two to eight drops HCl and two drops of sulphuric acid, (H_2SO_4). Boil to dense fumes of sulphuric. (Only the two drops of H_2SO_4 will be left in the vessel and dense white smoke will rise from it.) Add one teaspoonful of water and agitate until dissolved. Pour 1/3 of the solution into a test-tube or beaker and add two or three drops HCl and about 100 mg. potassium ferrocyanide ($K_2Fe(CN)_6$). A resulting strong blue color indicates iron. As all pottery contains some iron, and as it is usually especially plentiful in the slip, the depth of the color obtained must be taken into consideration. If carbon was present in the paint, it will be seen as minute black particles floating in the solution until the sulphuric acid begins to fume.

Test 4. Manganese

Pour remainder of paint solution not used in test for iron into a test tube. Add to it an equal amount of nitric acid (HNO_3) and from 100 to 300 mg. sodium bismuthate. The solution must

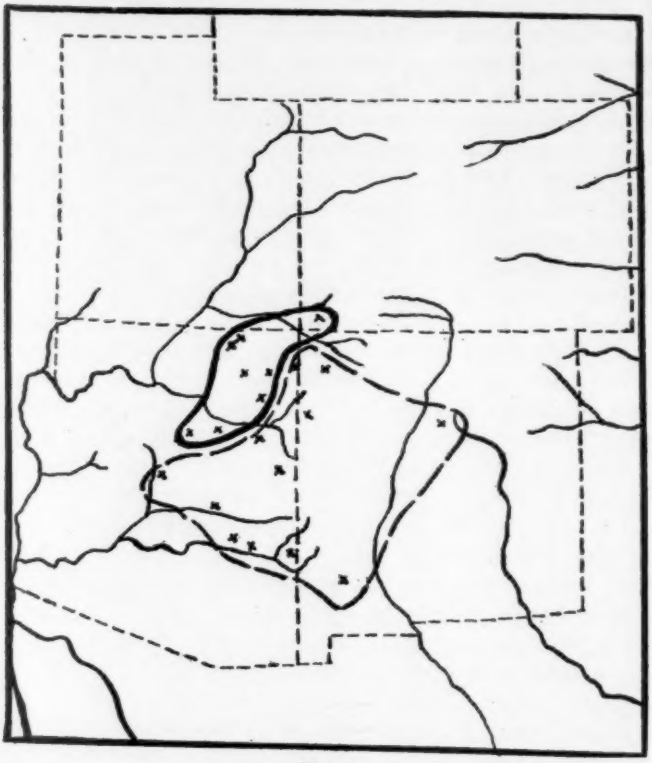
not be warm. A resulting purple color indicates the presence of Mn.

Conclusion

From the table it will be seen that carbon paint was developed in the San Juan in the early stages of pottery making, for it is found on the crude black-on-white ware made by the people of the circular pit houses. Carbon paint was used on black-on-white ware in this area, with the exception of Chaco canyon, to the end of the late prehistoric pueblo period. If carbon paint was the type for this area, why do we find manganese paint used on the Kayenta polychrome? This might seem to indicate a lack of constancy in paint types, but further consideration will furnish a reason that at present seems more plausible. After firing, the yellow clay used for the polychrome ware has not the hard porcelain texture noticeable in the white clay of this region. This yellow clay was very soft and friable and would not take a high polish; neither would it provide a surface firm enough to take and preserve a carbon paint. When applied to the porous surface, the plant extract would sink into the pores and would not be well enough protected by the silicate film to withstand firing; the carbon would soon be burned out. It could have taken but few trials to convince the people of this, and, not being used to the more resistant carbon and iron paint used by their neighbors of the Little Colorado, they probably tried dark clays and minerals until they found that one which would be permanent on the friable clay. Manganese occurs in black nodules and also in the dark clays around the edges of ponds, streams, and marshy lands. It would be natural to try this material early in their search, and, finding it suitable for their needs, they adopted it for their polychrome pottery but adhered to their old, more easily obtainable vegetal extract for the black-on-white ware on the hard surface of which it adhered well.

Over just what area the earliest black-on-white paint extended has not been determined as yet, but it covered the general San Juan area with the exception of Chaco canyon and the Lucachuca mountains, from where the Vandal Cave material was gathered.

Both of these districts come into that great southern and eastern area which used iron and carbon combined in their paint during the whole period of prehistoric pottery making. The circumference of this area stretched out or receded as the influence of its people increased or decreased.



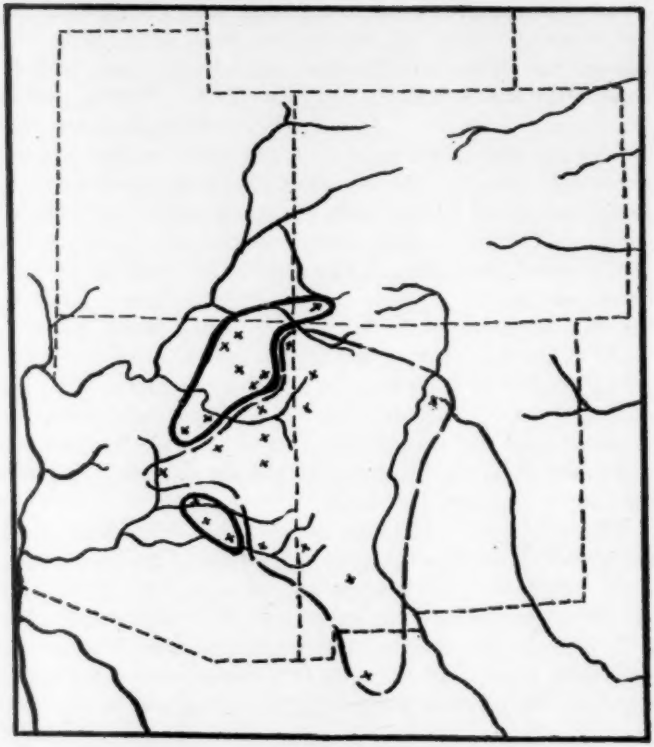
MAP 1

Before the great days of Cliff Palace or of Pueblo Bonito, while Kitsil and Betatakin and other great pueblos of the San Juan were still in their early stages, making the wide line black-on-white ware that came in at the beginning of the great Pueblo

period, and when Tularosa black-on-white was the type ware for the Middle as well as for the Upper Gila, carbon paint seems to have been used from Mesa Verde to Kayenta, at Flagstaff, and in the Jeddito valley and Hopi country. Iron paint was used at Pecos, Pueblo Bonito, in the Little Colorado valley, in the White mountains of Arizona, in the Verde valley, in the Roosevelt district and in those adjacent regions north of the Gila river between San Carlos and Gila bend, which region may be designated as the Middle Gila, in the Upper Gila and Tularosa, and on the Mimbres (see map 1). On this map and following, dotted lines indicate iron-plus-carbon paint area, and unbroken lines indicate carbon paint area. It will be noticed that these sites from which sherds were tested, when plotted on a map readily divide themselves into two great areas, each of which used one of the two main types of black paint. This distribution seems to have remained unchanged until some time after the massed black-on-white was developed in the San Juan. The next period, following closely on the first, shows a new type of ware in the northern section of the Middle Gila; the Little Colorado influence had come south and Little Colorado black-on-red ware was introduced. As type 3 paint had already been used on the Tularosa black-on-white ware, however, the new influence did not affect the paint distribution as plotted on map 1.

The first important change in paint areas came with a new pottery development in the Roosevelt district of the Middle Gila, which would seem to indicate the strength and far-reaching influence of the carbon paint area at that time. This is the period of the early Middle Gila polychrome, that black-on-white-on-red ware which seems to be the result of a combination of the black-on-red and the black-on-white hitherto predominant in this area. The new polychrome ware was characteristically decorated with dual-quadrate designs, those designs in which there are usually four large individual triangular duplicate design areas arranged around a simplified swastika, so that the center of the bowl is left undecorated. There are variations to the design arrangements. These characteristics and the use of carbon paint here seem to be a sure reflection of northern influence (see map 2).

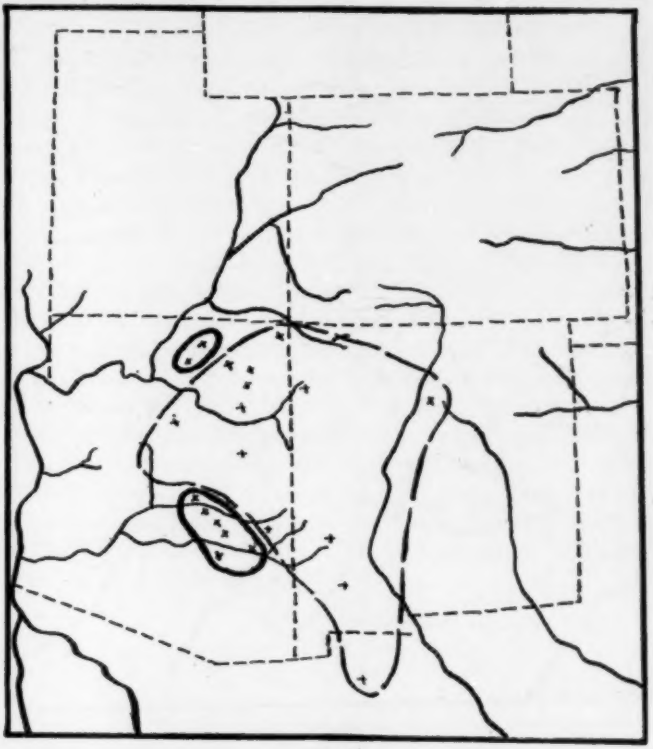
Soon after the birth of this early Middle Gila polychrome ware came the decay of Pueblo Bonito, and slightly later of Cliff Palace. This period marked the beginning of the decline of the carbon paint area, and, as we might expect, the iron paint began to expand into what had been the carbon paint districts. Little



MAP 2

Colorado influence stretched out into the Jeddito valley and the Hopi country on the north, to Flagstaff on the west, and to Casas Grandes, Chihuahua on the south. Except at Casas Grandes, Little Colorado black-on-red ware which was decorated with type 3 paint replaced the old San Juan black-on-white (see map 3).

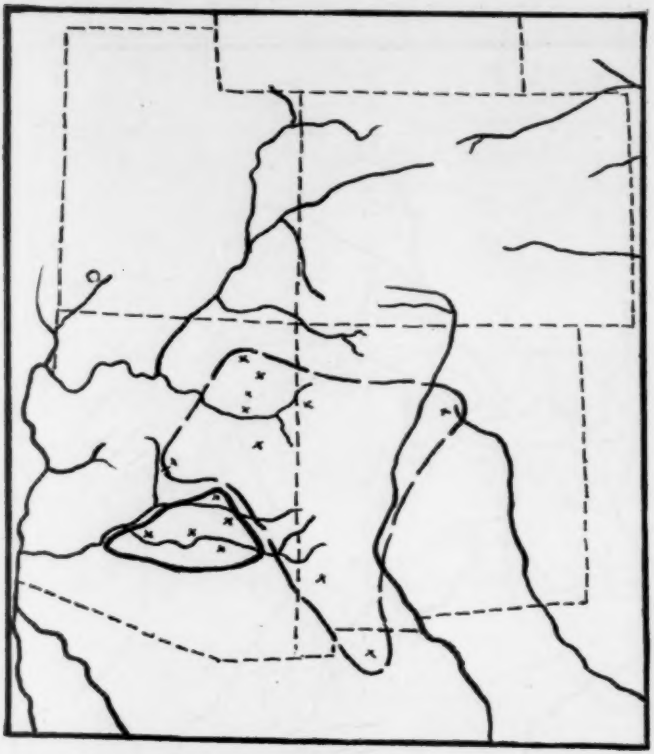
The final abandonment of the great pueblos of the Kayenta section of the San Juan came soon after and marked the last use of carbon paint in the north. The vegetal extract paint was still used on the late Middle Gila polychrome, the commonly known degenerate ware which grew out of the early Middle Gila poly-



MAP 3

chrome. The late polychrome spread west to Phoenix and on to Gila bend, and south to Casa Grande, in both of which districts the red-on-buff characteristic of the southern Middle Gila area had been predominant. On the Middle Gila carbon paint was used

until the end of the prehistoric Pueblo period. The iron paint area had been shrunk somewhat by the loss of Pueblo Bonito, but in the main it occupied much the same area as previously (see map 4).



MAP 4

After the northern carbon paint area had entirely disappeared, Jeddito yellow ware became popular in the Jeddito valley and in the Hopi district; glazes C and D were developed in the Little Colorado country, and glazes I, II, and III were used at Pecos. Now the Middle Gila culture, last to use carbon paint, disap-

peared. It has been debated whether Sikyatki ware belongs to a very late prehistoric or an early historic period, but at Sikyatki and throughout the Jeddito section iron paint lasted on to the end. Pecos made glazes IV, V, and VI and then was no more. Zuñi used glazes E and F even into modern times but now has gone back to the old dull paints. Thus we find iron paint lasting on into the present period in the pueblos of the Hopi in Arizona and in the villages of the Zuñi and other Pueblo Indians in New Mexico.

In time there must be changes and addition to this brief history of pottery paint and to the summary of cultural expansions and influences as indicated to an important extent by a study of paints. As every evidence would indicate that in their use of paint materials they were even more conservative than in their selection of designs, the testing of an adequate number of representative sherds might be expected to fill in many details in the movements and influences of a people. In the work already done, the type of paint used in each pueblo from which pottery was tested was plotted with pins on a large map, so that areas were even more evident than they seem on a small map where it was only possible to use crosses to indicate districts, not individual pueblos. Obtaining sufficient sherds of the earliest types of wares to determine whether carbon or iron paint was the first to originate, or whether each originated at about the same time in different areas, has been impossible as yet, but after such material is available new light may be shed on some of the perplexing problems of the earliest pottery makers of the Southwest.

TABLE OF BLACK PAINTS

Carbon Paint Area

AREAS	WARES TESTED	PAINT TYPE
San Juan—circular pit house	Black-on-white	2
Kayenta	Massed black-on-white	2
	Kayenta polychrome	4
	Wide line black-on-white (early)	2
Segi canyon		
Kitsil	Massed black-on-white	2
	Wide line black-on-white	2
	Kayenta polychrome	4
Betatakin	Massed black-on-white	2
	Wide line black-on-white	2
	Kayenta polychrome	4
Red lake	Wide line black-on-white	2
	Kayenta polychrome	4
Nietsie canyon	Massed black-on-white	2
	Kayenta polychrome	4
Mesa Verde		
Cliff Palace	Black-on-white	2
Flagstaff		
Turkey Hill ruin	Black-on-white	2
	Plain red, black interior	1
Elden ruin	Black-on-white	2
	Plain red, black interior	1
Old Caves Acropolis*	Black-on-white	2
Ruin 1 mile S. E. of Winona	Black-on-white	2
	Plain red, black interior	1
Young's Creek ruin 1	Black-on-white	2
	Plain red, black interior	1
Young's Creek ruin 2	Black-on-white	2
Oraibi, early*	Massed black-on-white	2
Jeddito valley		
Sikyatki	Massed black-on-white	2
Kokopinyama	Black-on-white	2
Lululongturqui	Black-on-white	2
Kawaikuh	Massed black-on-white	2
Biddahoochee	Black-on-white	2

* Sites marked with an asterisk will be found in both tables.

Carbon Paint Area (Continued)

Areas	Wares Tested	Paint Type
Middle Gila		
Miami-Globe district		
Hairpin ruin*	Early Middle Gila polychrome	2
	Late Middle Gila poly	2
	Plain red, black interior	1
Hilltop House*	Little Colorado black-on-red	2
	Early Middle Gila poly	2
	Plain red, black interior	1
	Corrugated, black interior	1
Beed Mountain House	Late Middle Gila poly	2
	Plain red, black interior	1
	Corrugated, black interior	1
Healey Terrace	Late Middle Gila poly	2
	Plain red, black interior	1
Sunburnt Ranch-I	Late Middle Gila poly	2
Togetsoge	Late Middle Gila poly	2
	Plain red, black interior	1
Casa Grande	Late Middle Gila poly	2
	Plain red, black interior	1
San Carlos Bird ruin	Late Middle Gila poly	2
	Plain red, black interior	1
	Little Colorado black-on-red	2
Roosevelt district	Early Middle Gila poly	2
	Late Middle Gila poly	2
	Corrugated, black int	1
	Plain red, black int	1
Tonto Cliff Dwellings	Late Middle Gila poly	2

Iron plus Carbon Paint Area

Areas	Wares Tested	Paint Type
Little Colorado area		
White Mountains		
Saw Mill	Black-on-white	3
	Corrugated, black int.	1
Silver Creek valley		
Forestdale	Black-on-white	3
	Little Col. black-on-red	3
Shumway	Little Col. black-on-red	3
	Jeddito yellow	3
Showlow	Little Col. black-on-red	3
	Black-on-white	3
	Corrugated, black int.	1
Snowflake	Little Col. black-on-red	3
	Black-on-white	3
Linden		
Pottery hill	Little Col. black-on-red	3
	Black-on-white	3
	Corrugated, black int.	1
Chaves pass	Little Col. black-on-red	3
	Jeddito yellow	3
Little Colorado valley		
Hawikuh	Black-on-white	3
Puerco	Black-on-white	3
St. John's		
Tucker ruin	Little Col. black-on-red	3
	Black-on-white	3
	Jeddito yellow	3
	Plain red, black int.	1
Petrified Forest		
Canyon Butte Wash	Little Colorado black-on-red	3
	Black-on-white	3
	Corrugated, black int.	1
	Plain red, black int.	1
Stone Axe ruin	Jeddito yellow	3
McDonald's canyon	Black-on-white	3
	Little Col. black-on-red	3
Chaco canyon		
Pueblo Bonito	Early black-on-white	3
	Black-on-white	3
Jeddito valley		
Sikyatki	Little Col. black-on-red	3

Iron plus Carbon Paint Area (Continued)

Areas	Wares Tested	Paint Type
	Jeddito yellow	3
	Sikyatki ware	3
Kokopinyama	Little Col. black-on-red	3
	Jeddito yellow	3
Lululonturqui	Jeddito yellow	3
	Little Col. black-on-red	3
Kawaikuh		
	Sikyatki ware	3
	Jeddito yellow	3
Awatobi	Little Col. black-on-red	3
	Jeddito yellow	3
	Sikyatki ware	3
Oraibi	Little Col. black-on-red	3
	Jeddito yellow	3
	Sikyatki ware	3
Verde valley		
Clemenceau		
Sugar Loaf mountain	Little Col. black-on-red	3
	Black-on-white	3
	Jeddito yellow	3
Montezuma's castle	Little Colorado black-on-red	3
	Jeddito yellow	3
Ridge ruin	Jeddito yellow	3
Middle Gila		
Miami—Globe district		
Hilltop House*	Little Col. black-on-red	3
	Tularosa black-on-white	3
	Plain red, black int.	1
	Corrugated, black int.	1
Black-on-White ruin	Tularosa black-on-white	3
	Little Col. black-on-red	3
Sunburnt Ranch ruin	Tularosa black-on-white	3
Roosevelt district*		
Numerous ruins	Tularosa black-on-white	3
	Little Col. black-on-red	3
	Plain red, black int.	1
	Corrugated, black int	1
San Carlos		
Bird ruin*	Little Col. black-on-red	3
	Tularosa black-on-white	3
	Red on smudged black, buff exterior	1

Iron plus Carbon Paint Area (Concluded)

Areas	Wares Tested	Paint Type
Upper Gila	Tularosa black-on-white	3
	Little Col. black-on-red	3
	Plain red, black int.	1
Bylas	Tularosa black-on-white	3
	Little Col. black-on-red	3
	Corrugated, black int.	1
Mimbres	Black-on-white	3
Casas Grandes, Chihuahua	Polychrome	3

Arizona State Museum,
University of Arizona

MAGNITUDE OF DISTRIBUTION, CENTRIFUGAL SPREAD, AND CENTRIPETAL ELABORATION OF CULTURE TRAITS

By WILSON D. WALLIS

1. Magnitude of Distribution of Culture Traits as a Criterion of Age

SOME ethnologists assume that the magnitude of distribution of a culture trait is an index of its age, though few state the principle in the form in which they imply it. Thus, the fact that the making of fire is known in every tribe is said to indicate the great antiquity of fire-making, and the widespread use of stone implements by primitive man is considered an indication of their great age. Widely distributed stories or plots carry the same implication:

> If the myth be one which encounters us in every quarter, nay in every obscure nook of the globe, we may plausibly regard it as ancient.[1]

In the realm of material culture the same principle is assumed to hold:

> The natural conclusion would be that the more widely distributed spur [on Eskimo harpoons] is by far the older form and the restricted screw is the more recent.[2]
>
> In general the larger the area of distribution, the older we may judge the trait to be.[3]

Certainly in many instances the age of a trait is correlated with the magnitude of its distribution, yet instances to the contrary are so numerous that one must doubt the validity of using distribution as a criterion of age. In the higher cultures the opportunity for the spread of traits is greater than among primitive

[1] Andrew Lang, Myth, Ritual, and Religion.

[2] Clark Wissler, Harpoons and Darts in the Stefansson Collection. Anthr. Pap. Am. Mus. Nat. Hist., 14: 443, 1916.

[3] Ruth Benedict, The Concept of the Guardian Spirit in North America. Mem. Am. Anthr. Assoc., 29: 62, 1923.

peoples, but the conditions are probably not essentially different, and the rapid diffusion of traits in civilization has a prototype in the slow percolation in savagery. However that may be, inference of the development of traits in non-historical cultures must be based on the known culture development in some other area, primitive or advanced, or facts cannot check fancy. In order, therefore, to test the validity of magnitude of distribution as an index to age, we selected at random traits referred to in chapters 2, 4, 9, and 21 of James H. Breasted, *Ancient Times* (Boston, 1916). The random selection yielded the following: bronze, mud-brick huts, irrigation canals, phalanx, split wheat, plough, wheel, use of the horse, battering ram, coinage, concept of last judgment, cuneiform writing, town walls, market place, settlements, roofs, metal, migrations, families, carts, business, merchants, books—in all, twenty-three. The relative distribution of the first three, bronze, mud-brick huts, and irrigation canals, does not remain constant. By about 3000 B.C. mud-brick huts and irrigation canals were more widely distributed than bronze; but by 100 B.C. the distribution of bronze over the Mediterranean and contiguous areas was greater than the distribution of mud-brick huts or irrigation canals; and a similar statement applies to the next three traits of material culture—split wheat, the plough, and the wheel. In the early centuries of the Bronze age the distribution of split wheat about the Mediterranean area, including the Swiss Lake Dwellings, was more extensive than that of either the plough or the wheel. Subsequently, however, the area of distribution of split wheat was less than that of either the plough or the wheel. The plough is probably older, and at one time was more widely distributed than the wheel, but by the beginning of the Christian era the wheel was more widely distributed. The next three features, likewise, namely, use of the horse, battering ram, coinage, vary in relative distribution during successive centuries.

In these instances, therefore, age can be inferred from distribution only if inference is made at the proper historical moment. But only when history is available can the proper moment for inference be known, and in the absence of history inference of age

is as likely to be erroneous as correct. The earliest traits have the first opportunities to spread, but frequently later traits outdistance them. When this occurs—and it occurs frequently—the more recent traits become the more widely distributed. Indeed, when changes are taking place, inevitably some more recent traits become more widely distributed than some older ones. The assumption that distribution is an index of age is based on the implicit assumption that, other things being equal, the more widely distributed trait is the older, since culture traits have a tendency to spread from place of origin to contiguous regions. But other things are not equal, being, on the contrary, at times egregiously unequal. Differences in culture areas must be taken into account. One culture is ready for the trait and accepts it; another is unprepared, and rejects it. There is a specific dynamic in the respective culture traits which insures their distribution in unequal degree. Agriculture, for example, may spread with greater rapidity than does ceramics or basketry, canoes may be adopted with greater readiness than is dog transportation, or, of course, conversely, depending on a number of factors. The Ghost Dance religion of aboriginal North America spreads rapidly over an area in which no other trait is so widely distributed, though we know that almost all other traits in the area are older.

Objection may be made that analogy with Western culture is misleading, since diffusion proceeds more rapidly in civilization than in savagery. But, with the important exception of contacts at a distance, in civilization there is mainly merely an intensification of the factors at work in savagery, rather than the introduction of new ones. Fads spread rapidly in civilization, but they spread in savagery also. Though the barrier of language is greater in savagery, it is not insurmountable, and culture influences break through. The savage is slow to perceive the utility of a new device; in time, however, if it is not too far removed from his culture setting, he perceives it. In civilization, likewise, receptivity varies: witness the distribution of the telephone, spreading more rapidly in America than in Europe, more rapidly in the commercial districts than in the non-commercial, and more rapidly in countries in which science has made headway than in those

in which it is undeveloped. And, if one cannot make inferences based on diffusion in civilization, where facts can check inference, then there are no data from which to make inferences. There has been, too, a curious failure to appreciate the fact that the spread of a trait presupposes the existence of older traits in the areas into which the new trait travels. A trait can spread only through culture areas, and the traits which compose these respective cultures are, of necessity, older than the introduced trait; that is, they are of greater age within those areas than is the introduced trait. Thus, when tobacco spreads into new areas it is more recent there than the traits which comprise the respective cultures at the time of its introduction and possibly it is more recent than other traits in the area from which it has come. Indeed, whenever a trait spreads rapidly this must be the case. The diffusion of a trait, therefore, implies that numerous traits which are not so widely distributed are older. To the extent that this is true, the widely distributed trait is of necessity more recent than those traits which constitute the respective cultures which it penetrates. Only on the supposition that the widely diffused trait is more persistent than those amid which it finds lodgment can it be supposed that magnitude of distribution is positively correlated with the age of the trait; and if all traits are included, probably wide distribution indicates recency rather than antiquity.[4]

In his work on *Primitive Art* Professor Boas characterizes some of the reconstructions which identify extent of distribution with age as "untenable." The principle that the more widely distributed traits are the older is correct if properly used, he says, but it must not be used incorrectly. This seems to be equivalent to stating that it is true when it is true, and false when it is false, but gives us no inkling of when it is true and when it is false. Boas adduces the fact that the use of stone is more widely distributed than the use of metals, and suggests that other data of

[4] Because of their special bearing on this argument I have taken the liberty of repeating in the above paragraphs a point which I made previously in an article on Diffusion as a Criterion of Age, published in this journal (27: 91–99, 1925). See also Roland B. Dixon, The Building of Cultures, 70–75, New York, 1928.

prehistoric archaeology show a similar positive correlation of magnitude of distribution with age.

The data of prehistoric archaeology prove that some of these universal achievements go back to paleolithic times. Stone implements, fire, and ornaments are found in that period. Pottery and agriculture, which are less universally distributed, appear later. Metals, the use of which is still more limited in space, are found still later. Recent attempts have been made to raise to a general principle this point of view which, with due caution, may be applied here and there. Herbert Spinden in his reconstruction of American prehistoric chronology, Alfred Kroeber in his analysis of cultural forms of the Pacific coast, and quite recently Clark Wissler have built up, founded on this principle, a system of historic sequences that appear to me as quite untenable. That widely distributed cultural traits develop special forms in each particular area is a truism that does not require any proof. That these local developments may be arranged in a chronological series, that those of the most limited distribution are the youngest, is only partially true. It is not difficult to find phenomena that center in a certain region and dwindle down at the outskirts, but it is not true that these invariably arise on an ancient substratum. The converse is often true, that an idea emanating from a center [from the periphery?] is diffused over a wide area. Neither may the origin always be looked for in the area of the strongest development. In the same way as we find animals surviving and flourishing in regions far distant from the locality in which they developed, so cultural traits may be transferred and find their highest expression in regions far away from their origin. The bronze castings of Benin; the wood carvings of New Zealand; the bronze work of ancient Scandinavia; the giant stone work of Easter Island; the early cultural development of Ireland and its influences over Europe are examples of this kind.[5]

A comparison of the distribution of eolithic implements with paleolithic is scarcely apposite, for the human workmanship of the former is problematical and we know very little about their total distribution, and, indeed, very little about the total distribution of paleolithic implements. With regard to neolithic implements, however, we are on surer ground. Here the facts do not confirm the "principle." Even in the Old World, so far as the data are available, neolithic implements are more widely distributed than paleolithic implements and in the New World there are only neolithic implements. Thus, taking the whole of the available data, neolithic implements are more widely spread than paleolithic. The first metal to be utilized is copper, and then bronze; yet in prehistoric times copper was not as widely diffused

[5] Franz Boas, Primitive Art, preface. Oslo, 1927.

in the Old World as was bronze. Indeed, in most areas of the Old World in which both copper and bronze are found, bronze preceded copper, and therefore, at an early stage in its development it was more widely distributed than the older copper. There is reason to suppose, too, that in the higher civilizations of the New World the working of copper preceded the working of bronze; yet in those portions of the New World in which this is assumed to have been the case, bronze is as widely distributed as is smelted copper; for outside of these higher cultures there was no smelting of copper in the New World. In the Old World the working of iron, which followed the moulding of bronze, became more widely distributed than bronze casting. In the Old World the working of iron permeated all of the regions in which bronze had been cast, and also the entire African continent, in which no bronze was worked, save in Egypt and on a small portion of the West Coast. Many parts of Asia which had never known bronze-casting adopted the working of iron. In not one of these instances, then, does the alleged principle hold, or rather, in every one of them it holds in exactly reverse form, the more widely diffused trait being the younger, not the older. Many other traits of prehistoric Europe tell a similar tale. Thus, in the Magdalenian period, toward the end of paleolithic times, there existed numerous microliths, types of implements which had appeared previously and which became common in the succeeding Azilian period, at the close of paleolithic times. These did not become as widely distributed as the types of neolithic implements which followed them. There existed at this time the so-called arrow-straightener, or *baton de commandement*, which possibly was not diffused at all, for it has not been found in later prehistoric Europe, and outside of the Eskimo area it is almost as rare as the proverbial hen's teeth. At this time, too, appeared the harpoon, which was diffused to so slight an extent that it has been found nowhere else in prehistoric Europe except around the Mediterranean, where it was formerly used, probably by the ancient Egyptians, in hunting seals. In addition to the Pacific Coast area of North America it has been reported from less than a half dozen ethnological areas, in each of which, for any intimation to the contrary, it

may have developed independently. Contemporary with it, in Magdalenian times, was the spear-thrower, and it too, so far as is known, did not diffuse, but disappeared from prehistoric Europe, and has been found in very few culture areas, such as Australian, Eskimoan, and Nahuan.

The multi-pronged spear was used in Magdalenian times, but it, too, attained a limited distribution in the Old World, and was absent from nearly all of the New World. Tangs were put on these implements by hacking the surface to roughen it, by end or transverse knobs, and by spurs. But the association of these three processes was not widely distributed, and is perhaps restricted to Eskimo culture. Not until neolithic times did the bow and arrow appear, but eventually the use of them became more widespread than the use of the spear; however, to a large extent they were concomitant, for Australia and (most of) Polynesia and Micronesia were the only large areas in which the spear was used and the bow was absent.

In Magdalenian times there was a highly developed realism in art, but this was not widely diffused; it was comparatively rare in subsequent European prehistoric art, and such art was not widely spread among contemporary peoples; at least the ability to portray realistically was not exhibited. Masks were used, but the use of masks, so far as there is evidence, was not widely diffused through subsequent cultures in Europe, and there is no evidence that it was ever as widely diffused throughout the world as the neolithic implements which came later. Mutilation of a finger, it is believed, was practiced; but this, too, appears not to have diffused over adjacent regions, and it may have developed independently in all the other regions, comparatively few, in which it is known to have been practised. Modeling was practised, as were bas-relief, sculpture, perspective drawing, impressionism, composition; but no one of these traits or techniques became widely diffused, or certainly not as widely diffused as many traits which arose subsequently. In the closing phases of the Paleolithic, feather headdress was worn in Southwestern Europe, but this was of restricted ethnographical distribution, and, indeed, was common only in portions of the New World, where it almost

certainly arose independently of Old World influences. Thus, as far as the data are available, the traits of paleolithic culture were not widely distributed in later cultures.

Diffusion of a trait involves the dimension of time, though many students have treated the matter as though only space dimensions were involved, and then they conclude that the space relations can be expressed as a time factor. If one assumes fairly uniform rates of diffusion and long intervals of time, and that new traits arise seldom and spread slowly, then the more widely distributed traits will be the older. But the correlation implies fairly constant rates of diffusion and long time intervals. That at certain times the older trait will be the more widely diffused is necessarily true. Thus when only paleolithic methods of workmanship are known only paleolithic techniques can be diffused. During paleolithic times this is the case for a hundred thousand years or more, and meanwhile paleolithic traits can travel to all cultures. When a neolithic technique appears it is developed in only one place, or certainly in only a few places simultaneously, and at its inception it will, of necessity, be less widely diffused than an older technique which for a hundred thousand years has had the opportunity to diffuse. However rapidly it spreads it cannot at once outdistance paleolithic techniques, and probably all existing cultures will already have adopted the latter.

So, too, copper, bronze, and iron, respectively, will, of necessity, be of limited distribution at their inception, and they can only gradually extend their borders, but a new trait may travel faster than its predecessors, overtake them, and henceforth assume the lead in the invasion of new territory. This happened in the case of the respective metals. Here the time factors were smaller than in the stone ages, and the rates of diffusion were accelerated, because culture changes were now more rapid and communication and trade facilitated the transmission of these new traits. Had copper been given a hundred thousand years to spread it, too, might have gone to all mankind, and so, under similar circumstances, might bronze; but bronze spread more rapidly than copper, and iron spread more rapidly than bronze, so that the most recent of the three metals became the most widely

diffused. But even if the "principle" did hold in the prehistoric world this would be no warrant for assuming that it would hold in any other phase of the culture world, primitive or advanced, least of all outside of the sphere of material culture. Professor Boas seems to assert that the "principle" is sometimes true but not always to be trusted, good enough to believe in with caution, but not good enough to follow in practice. But the "principle," which is true if you believe it but false if you use it, seems so paradoxical as to be almost unprincipled. When and how far the alleged correlation of distribution with age exists no one, so far as we are aware, has even attempted to show. The faith is strong, but the works are weak. More recently, however, Professor Boas has expressed unqualifiedly his conviction that one cannot construct from an examination of the static forms of culture the sequence which expresses the actual historical development of respective traits.

> Every culture is a complex growth, and, on account of the intimate, early associations of people inhabiting large areas, it is not admissible to assume that the accidental causes that modify the course of development will cancel one another and that the great mass of evidence will give us a picture of a law of the growth of culture.[6]

2. The Alleged Centrifugal Spread and Centripetal Elaboration of Traits

Wissler compares the spread of a trait to the outgoing waves which ensue when a pebble is dropped into a pool of water, and states that the area of intensive development or elaboration of a trait is the place of origin and that this is approximately the geographical center of the area through which the trait has been diffused. He assumes, therefore, that the trait spreads with equal facility, or at least to an equal extent, in all directions, and asserts that the simpler forms of the traits lie on the periphery of the area of distribution and the more complex form at, or near, the geographical center of the area.[7]

---

[6] Franz Boas, Anthropology and Modern Life, 209. New York, 1928.

[7] Clark Wissler, Man and Culture. New York, 1923. Also Relation of Nature to Man in Aboriginal America. New York, 1926.

We applied this test to the traits mentioned by Wissler in his *Man and Culture*, pages 150 to 157 inclusive, in the chapter in which he discusses the relation of age to magnitude of distribution, and of elaboration of the trait to place of origin. The traits there referred to are pottery, paint, swastika, spiral, cutting off a finger, sacrifice to the sun, sacrificial blood-letting, human sacrifice, hitches, weaving instruments, age-grade societies for men, fire drill, chipping of stone, and lance.

In the Old World the area of intensive ceramics has shifted from time to time, though there is probably but one area of origin. Hence Wissler's method indicates the place of origin correctly only if one selects the proper century in which to identify intensity of development with place of origin. By his criterion, in one century the place of origin would seem to be the Continent, in others, Britain, the Valley of the Nile, or Aegean lands. Paints, the next trait in the list, are not susceptible of historical treatment, for their origins and diffusion are not known. The diffusion of the swastika has not been a centrifugal dispersion into geographically proximate regions. It is not found in Egypt, Chaldea, Assyria, or Phoenicia, although these cultures borrowed designs liberally. It is present in Troy, whence it spread to Gaul, Scandinavia, and the British Isles. It travelled eastward into India and into all lands penetrated by Buddhism: Tibet, Mongolia, Southeast Asia, China, and Japan. In Persia it was rare and played no important rôle, but it was widespread in other Aryan lands and wherever Buddhism flourished. In the contiguous Egyptian-Semitic cultures it obtained no foothold. Perhaps the failure to find a favorable soil in the latter may be attributed to the presence in these cultures of the *crux ansata*, the Egyptian Key of Life, which is found from Persia to Libya. Possibly the *crux ansata* was already fulfilling much the same function which the swastika fulfilled in Aryan and Buddhist cultures and consequently it may have been an indirectly repellent motive. However that may be, the ancient world is divisible into two culture zones, one of which the swastika penetrated, the other, the *crux ansata*, with but slight interpenetrations along the frontier of

contact, in Cyprus, Rhodes, Asia Minor, and Libya. Certainly there was not a centrifugal radiation of the trait.

The spiral was introduced into the Aegean area by invaders who came to Thessaly from Transylvania, by way of eastern Bulgaria and Thrace, or at least their culture spread by that route. It did not appear in Crete until Early Minoan II, whence it diffused to the Aegean area. From there it travelled by the Danube route to Scandinavia, thence to Ireland, and from the Emerald Isle to Britain. Meanwhile the center of distribution was shifting to north and west, for the spiral did not travel with the same facility to east or south, although, of course, the place of origin was not shifting. The place of origin, therefore, does not remain the center of the area of distribution.

The diffusion of the practice of cutting off a finger is not susceptible of historical treatment, and we pass to the next feature in the above list, sacrifice to the sun. In the Old World such sacrifice originated in Egypt or in the civilizations of Persia or India, but at a later date, when the Mithraic cult had penetrated the Roman Empire, it became as widespread in Europe as in Asia or Africa. Mithraism had only one origin, but the center of distribution shifted from century to century and therefore, by Wissler's criterion, tells a varied story, each tale contradicting the others. The center of distribution is not the place of origin, for the trait did not spread concentrically. It did not spread eastward or northward. In the above instances neither the place of intensive development nor the center of distribution is an index to place of origin.

As a further check upon this principle, we again used random sampling and considered the traits described by Kroeber in chapters 10 to 13 of his *Anthropology*, in which he discusses the diffusion of certain traits.[8] The principle of the arch spread about the Mediterranean, first among the ancient civilizations of that region, and later through all the regions which came under Hellenistic influence. With the spread of Roman influences through Europe the arch likewise spread. But at no time was the diffusion centrifugal.

[8] Alfred L. Kroeber, Anthropology. New York, 1923.

The concept of the week originated in the eastern Mediterranean area and spread into other Mediterranean cultures, and finally throughout Europe as well as far into southern Asia, wherever Mohammedan or Buddhist influences permeated. But non-Mohammedan Africa was little affected, for the spread was not centrifugal. The alphabet developed in Semitic lands to the east of the Mediterranean and Phoenician traders disseminated it throughout the Mediterranean area. With the exception of China the higher civilizations adopted it but the lower cultures were not influenced, save here and there and only to a slight extent. The girls' adolescent ceremonies of the Pacific coast, assuming that they originated on the Northwest coast, spread south as far as the gulf of California, and possibly even into the Southwest—if the ceremonies of the latter are not the result of influences from Mexico. But they did not spread among the Eskimo to the north or east, nor among the Plateau tribes; the diffusion was longitudinal rather than centrifugal.

Wissler points out that in the distribution of the conical shelters typical of the Plains and the Eastern Woodland areas, the three-pole tipi is predominant near the center of the area, the four-pole tipi is to some extent interspersed with these, yet reaches wider margins of distribution to south, east, north, and west, and "conical shelters in general" are in the peripheral areas. But there is no evidence that the three-pole tipi, which predominates at the center, developed out of the types peripheral to it.

We do not know that the three-pole tipi is a later development than the four-pole tipi, even if the former does possess advantages over the latter. A similar objection applies to most of Wissler's illustrations. They do not illustrate unless one takes for granted the truth of the principle which he proposes to establish—and not always then; for some of the instances adduced by him in which the diffusion can be historically traced do not conform with his principle.

The peyote cult, for example, began in the Rio Grande region and spread rapidly into some adjacent tribes. It did not spread in all directions, however, though the fact that Indians were then on reservations (1850–1919) would, no doubt, modify normal diffusion. Nevertheless, during the period 1850–1890 it covered

a region some hundreds of miles northeast and southwest but did not go a comparable distance to reservations to the north, south, or west. From 1891 to 1905 it secured a footing on reservations close to those in Oklahoma where it had previously been introduced, on one far to the north, and on one far to the northwest, skipping intervening territory—though the trait could not have skipped intervening territory in aboriginal days, when direct communication was limited to contiguous cultures and there were no contacts at a distance. Its spread shows, however, that mere geographical contiguity does not insure diffusion, and that, in any case, the time element is a factor. By 1922 the peyote cult had spread through practically all of the Plains area except a corner in the Northwest, but elsewhere it met with little success; for the Southwest cultures contiguous with the region in which the peyote cult originated did not accept it.

The spread of the trait, therefore, has its explanation in culture rather than in mere geographical contiguity; and the fact that such is the case is further demonstrated by the difference in rate of diffusion in successive decades. Although the Kiowa adopted the peyote cult as early as 1850, before 1890 only three tribes, it appears, had adopted it. In 1890, however, three tribes adopted the cult, in 1891 two, in 1892 one, and in 1893 one. The distribution of the cult then remained stationary for a seven year period. Not until 1900, when it came to the Shawnee reservation in Oklahoma, was it adopted in a new area.

During the following year it appeared among the Winnebago of Nebraska, in 1902 among the Osage and the Ponca, in 1902 among the Northern Arapaho. In 1906 it came to the Seneca reservation in Oklahoma and to the Omaha, there being one tribal adoption each year in the period 1907–1910. There was no adoption in 1911 or in 1913, but in 1912 there was one adoption, in 1914 two, in 1915 none, in 1916 two, and in 1919 one. Thus in the twenty-year period, 1890–1919, there were twenty-four adoptions, while in the forty year period, 1850–1890, there were but three adoptions. This variation in rate of diffusion cannot be explained in sheer geographical terms.

The next culture trait described by Wissler is the use of the horse. Here likewise the facts contradict his thesis. As early

as 1542 the horse was introduced from the region near the gulf of Mexico or from across the Mexican border. But the trait did not spread in all directions with equal facility, nor with uniform speed. It went rapidly through the Plains area, but scarcely penetrated any region beyond, whereas a centrifugal spread would have carried the trait over most of Mexico, throughout the Southwest, into California, and well into the Southeast. Here, too, culture rather than mere geographical contiguity accounts for the diffusion. The Grass Dance follows similar routes of travel. It originates in the Plains area and spreads throughout that region, going into Wisconsin, the adjacent northern Minnesota area, and south into Texas. But the spread in a southeast-northwesterly direction is twice as extensive as that in a northeast-southwesterly direction, for, here too, the favorable soil is determined by culture and not by mere geographical proximity. Wissler significantly omits from his list the Ghost Dance or New World messianic religions. These do not fall into the concentric scheme which he uses as the framework for his data; indeed, they did not spread at all in some directions. Thus all that Wissler succeeds in demonstrating is: (1) a trait can spread only from the place in which it originates; (2) it can move from the place of origin only into adjacent territory, not skipping tribes along the routes of dissemination; (3) sometimes not all phases of a complex trait spread, but some may be left behind as the trait travels, so that frequently it is found in most elaborate form close to the place of origin. However, though the last mentioned principle may be true if the trait is elaborated before it spreads, it has not been shown to be true if the trait spreads in a simple form which is elaborated subsequently. Although Wissler has frequently used this principle of interpretation, we do not know a single instance in which he has demonstrated its truth. Thus, when discussing shamanistic organizations in the Plains area he concludes that since it is

> very strong among the Pawnee and very weak among the Eastern Dakota we must assume that the Pawnee are the originators.[9]

[9] Clark Wissler, General Discussion of Shamanistic and Dancing Societies. Anthr. Pap. Am. Mus. Nat. Hist., 11: 860, 1916.

But is there any justification for this inference? And can the inference be justified before the principle is empirically established? Indeed, Wissler himself emphasizes the fact that the three widely spread ceremonies in the Plains area, the Grass Dance, the Dream Dance, and the *Iruska*, or Fire Dance, have specific distributions which correspond respectively to subsidiary Plains area cultures. The Grass Dance is typical of the Western group: the Sarsi, Blackfoot, Gros Ventre, Assiniboine, Crow, Hidatsa, Teton, and Arapho; the Dream Dance flourishes in the northeastern part of the area, among the Potawatomi, Menomini, Ojibwa, Iowa, Winnebago, Sauk, Fox, Kickapoo and perhaps Plains-Ojibwa and Plains-Cree; while the *Iruska* is found in the southeast among the Omaha, Ponca, Oto, Osage, Iowa, Kansa, and Pawnee.

The most striking aspect of this distribution is its general agreement with cultural and geographical distinctions. Our western group comprises in the main the typical Plains tribes, our southeastern group is a part of the intermediate Plains group, and our northeastern, the typical Eastern Woodland group. The peculiarity of this correlation is that in each group we find a different form of the dance and that each form tends to completely cover its culture area. Of these types, the western and southeastern are much more alike than the northeastern. Thus the distinctive Central Algonkin culture seems to have modified the Grass Dance most. Hence, granting that the ceremony was distributed from a single center, we have what looks like pattern phenomena, for most surely the uniformity of type in each cultural group must be due to influences from within. We have, therefore, an analytic problem, to discover what specific influences were responsible for the differentiation of these types.[10]

Again:

Notwithstanding the great uniformity in the Grass Dance we have a geographical grouping of minor differences and when we look a little deeper, we find evidences of pattern phenomena in that some dominant ceremonial concepts of the respective localities have been incorporated in the Grass Dance and have inhibited the continuance of others. It is also suggested that very great differences in the culture of two groups of people will retard diffusion, or at least tend to modify and obscure the identity of borrowed traits. Finally, we may suspect that the preceding differences in the Grass Dance are due to cultural differences in the tribes concerned.[11] Thus we have followed the devious path of diffusion back and forth across the Plains Area.[12]

[10] Ibid., 865.
[11] Ibid., 867–868.
[12] Ibid., 870.

At the outset we found that irrespective of chronology the different forms of the ceremony correlated in a remarkable way with the culture grouping of the constituent tribes. Our subsequent analysis of its diffusion has in the main not obscured this correlation. First, we have the gross fact that in the main, the ceremony is confined to the Plains area. Almost every tribe took it. It is true that it has found its way over the border into the fringes of two areas in very recent years, but its failure to go farther is not due to lack of time, for the older form of the ceremony followed about the same path. Why, for example, did the fire trick complex stick to the Upper Missouri-Mississippi Basin? It is quite probable that its distribution was governed by the flora, since a plant preparation was necessary to the trick. On this point, nothing definite can be stated until the identity of the plant has been established. Yet this could not apply to the modern form of the ceremony from which the fire trick is absent. It must be admitted, therefore, that whatever the cause, we have here the work of the same factors that produce the familiar culture area phenomenon. And, as we have previously noted, the most diverse variants of the modern ceremony are found in the west among the Shoshone and in the east among the Central Algonkin intermediate group. Again, how comes it that the Central Algonkin variant, originated by a Potawatomi, is so far removed as to be almost unrecognizable? If a mere coincidence, it is truly remarkable. It is far more likely that we have here a concrete example of what may be expected, if a trait wanders over into a culture where its pattern is a true misfit.[13]

The inapplicability of Wissler's principle of centrifugal diffusion is further evidenced in traits of the Old World where historical evidence is available. One may cite the relative distributions in the Old World of the symbolism attaching to the number four and that attaching to the number seven. Four was a mystic number of magical and ceremonial importance in ancient Egypt, in ancient India, among the Greeks of Hesiod's time, about the eighth century B. C., in China, and in Malaysia. Presumably it represents the diffusion through these areas of a concept which originated, or was first elaborated, in ancient Egypt. At a later date there deveoped in Babylonia the concept of seven as a mystic number and this trait influenced all Semitic peoples, and became an important element in Jewish and Mohammedan thought. It traveled to Greece, where it overlay the older mystic concept of four, and to some extent supplemented rather than displaced it, penetrated the Arab world and European cultures, and spread through India and Malaysia. For centuries it has been a more widely diffused concept in the Old World than the concept four, although, as has been indicated, the latter is in these areas,

[13] Ibid., 872.

as far as historical record is available, the older. Thus the older trait is the less widely diffused, and in neither case is the area of origin the center of the area of distribution.

The explanation of the diffusion is culture and not mere geographical contiguity. The diffusion has followed the routes of Jewish, Christian, and Mohammedan influences. Similarly, the historical religions have not diffused concentrically, and seldom is the place of greatest elaboration the place of origin. Buddhism traveled mainly to the east and but little to north or south as it moved eastward. Christianity spread to the west over Europe and the New World but made merely a trek across Asia, following trade routes, and scarcely influenced that continent or Africa. Mohammedanism spread through northern Africa and across India and southeast Asia into the Philippines, but it did not penetrate in comparable manner either Europe or northern Asia. Protestantism spread to the north and west of Europe but not to the south and east. Methodism spread through England and Wales and penetrated the Protestant portions of English-speaking countries across the seas, but it was not adopted in Scotland or in Ireland. Christian Science spread through the New England states, across the Middle West to the Pacific coast, but it obtained comparatively few adherents in the Southern states. Presbyterianism spread through Scotland and into Protestant Ireland, but elsewhere in Great Britain and in Europe it secured no hold, although, like Methodism, it crossed the seas to Protestant lands. The diffusion of scores of other religious cults tells a similar story of irregularity in spread. The difficult thing is to find a single instance in which the spread has been centrifugal.

The very existence of definite culture areas is *prima facie* evidence, if not proof positive, that a culture trait seldom spreads centrifugally, for if it did so the boundaries of culture areas would soon disappear. And even if one admits that every new elaboration starts at the center of the area of distribution, the supposition that it spreads only to the boundaries of the culture in which it originates implies that the explanation of the spread is not mere geographical contiguity but favorable culture soil.

UNIVERSITY OF MINNESOTA,
MINNEAPOLIS

ON CALIFORNIA MORTUARIES

By W. C. MAC LEOD

DR. KROEBER'S survey of, and mapping of, mortuary practices in California, brings much order into an otherwise chaotic subject.[1] It is necessary at present to reconsider some aspects of the problems offered.

The area of cremation on the map should be carried up, on the northwest coastal area of California, to the borders of the Wiyot and the Hupa. On the coast, just below the Wiyot, were the Sinkyone. These, says Kroeber, cremated "those slain in battle, or dying at a distance from home, or under circumstances imposing haste."[2] Others were buried. Next below were the Mattole; an early settler reported that this people cremated their dead. In all likelihood he had observed their cremation of those dead in battle; in Powers' day the Mattole only buried.[3] The Kato, next below on the coast, cremated at least those slain in war; how they disposed of others we do not know, but presumably they buried them.[4] Between the Wiyot and the Hupa were the Nongatl, neighbors of the Hupa, who apparently cremated those dead in battle.[5]

The above groups were Athabascan, nearly related to the Hupa. To the south of these were the Coast Yuki, the Huchnom (Yukian) and the interior Yuki or Yuki proper. From his field work among these groups Dr. Kroeber reports that, in their memory, the Yuki of the interior cremated "those slain in fighting,

---

[1] A. L. Kroeber, Handbook of the Indians of California. Bur. Am. Ethn., Bull. 78, 1925; see map and index.

[2] Kroeber, Handbook, p. 146; source not indicated.

[3] S. Powers, The Indians of California. Contrib. Am. Ethn., Geol. Surv , (data gathered 1872–1875), 3: 110; cf. Kroeber, 142, 146.

[4] Kroeber, 156; for references see 967.

[5] Powers, 87, 110. Cf. Mac Leod, Mortuary Aspects of Northwest Coast Culture. Am. Anthr. n. s., 27: 122–148, 1925; Father Morice, and the Sikanni, ibid., 28: 566, 1926.

[6] Kroeber, 215, 220, 221.

or dying under unusual circumstances." These Yuki stated that their neighbors the Huchnom, like the Pomo, regularly cremated their dead. The Coast Yuki told Kroeber that "like all their neighbors, including the Kato and the northeastern Pomo of the coast, they cremated when it was easier to dispose of the ashes of the deceased than his body." The detached Wappo, Yukian linguistically, but under Pomo influence culturally, cremated those dead in battle, and apparently other classes of the dead.[6] Powers, enigmatically enough, for "the Yuki," merely reported, of war deaths, that:

> If any dead are left on the field, both parties return afterward and carry them away and bury them (they burn only those whom they do not honor, though this rule is not invariable). . . . .[7]

As I have elsewhere indicated, it is expedient henceforth to classify groups practising cremation at all, according to the classes of the dead who are cremated. The fact that the northwestern Athabascans mentioned (and apparently *all* the Yukian groups) cremated at least those who died in battle, means that these groups should be recorded and mapped as practising cremation. The Sinkyone at least—presumably, I think, their neighbors also—cremated those who died far from home; and to judge from further notes on the Yurok and others in this paper, and from other comparisons, I would venture the guess that *these northwestern groups cremated all who died in any way from violence*, as well, no doubt, as certain other classes of the dead. These northwest California groups therefore are nearly on a par with the Tlingit and other more northerly groups as far as cremation is concerned.

A more intensive study of tribes already listed as practising cremation is desirable, to learn just what classes of the dead were *not* cremated. Among the Pomo most classes of corpses seem to have been cremated;[8] not all, however. Powers notes for the Makhelchel of Clear lake that "As all good Indians are burned, so the wicked are 'holed'," and adds that, since the Patwin, the

[7] Powers, 129.

[8] Cf. Powers, 168, 181, 194, and on the cremation of those dead in battle and of perhaps others by the Wappo, see the tale in Kroeber, 220, and note on p. 221.

much despised neighbors of the Makhelchel, only bury, burial is considered by the Makhelchel as a miserable fate.[9] Of the Shanel (Se-nel) Powers notes that "The dead are *mostly* burned," that is, presumably, not all were cremated.[10] But he noted that the Kabinapek of Clear lake were "singular in their devotion to the formality of incineration," and instances a case which shows that even persons meeting death by *drowning* were searched for in order that their remains might be cremated,[11] for without cremation their spirits would not be released and they could not enter the *happy* regions of the afterworld.[12] But we should like to know what classes of the dead were classed as "bad," suffered burial, and became incarnated as grizzly bears and other loathsome, taboo creatures. I think it very likely that the "bad Indians" are not those who have lived immorally, *but merely those who died a "bad" death.*

Among the Yokuts, cremation practices vary from group to group where cremation is known to be practised at all. The Yaudanchi and Yauelmani burned only those who died at a distance from home, bringing back the ashes for burial.[13] But the Chukchansi—neighbors and intimates of the cremating Miwok—Powers reports as cremating those "who die a violent death, or are snake bitten." And this group also, in contradistinction to the Kuadanchi and Yauelmani, do *not* cremate those who die at a distance from home; such persons are buried beside the trail, and passersby throw a stone now and then upon the grave.[14]

Dr. Kroeber is inclined to give weight to a native rationalization to the effect that the widespread cremation of those dead at a distance is the result of desire to be buried at home, and for convenience in transporting the remains. But cremation of those dying at a distance is in all likelihood not to be so easily explained. The distribution of the trait must be mapped out, and note made

[9] Cf. Powers, 214–215, 219; also 194, 240.

[10] Powers, 169.

[11] Among Tlingit and Haida the dead by drowning go to a separate afterworld; we do not know if they were cremated or not.

[12] Powers, 207.

[13] Kroeber, 499; cf. localities, pp. 527 (map) and p. 478 seq.

[14] Powers, 382.

of its linkages with native cosmologies. Note that the Yurok, and other Californian tribes, do not cremate those who die at a distance. The Yurok brought back the whole corpse, if they could; if not, they bought the right to bury in some far-away cemetery.

The segregation of those dead by violence for special consideration appears among the Yurok, who seem to have buried all corpses. In the case of "those who had been killed by violence," or, as it is elsewhere put, those "killed with weapons," mourning customs were different, and given a pecuniary rationalization and adjustment. The souls of such among the dead "went to a separate place among the willows," apparently on the margin of the Yurok River Styx, and "here they forever shouted, and danced the war dance."[15]

This distinction—no doubt shared by the neighbors of the Yurok—bears comparison with the facts of mortuary traits on the cremating section of the far northern west coast, where the distinction was accompanied by distinctive mortuary disposal of the remains.

Dr. Lowie has pointed out that the only Shoshone groups of the plateau who cremate any of their dead are those who have within recent times adopted the south California mourning ceremony; these Shoshone are the Shivwits and Moapa groups; the Paviotso say that they never cremated.[16] This may well suggest that cremation among the Shoshone is the consequence of imitation of south California practice. On the other hand, however, we should note that the northwest California Athabascan groups who cremated were not only considerably beyond the northern limits of the distribution of the southern mourning ceremony, but beyond the limits of that influence of the ceremony which appears in the extravagant mortuary destruction of property among the Yuki, Lassik, and southern Wintun.

There are some indications that cremation practices in northwestern California are to be genetically intimately linked with

[15] Kroeber, 37, 47; 215, 499.

[16] R. H. Lowie, Culture Connection of California and Plateau Shoshonean Tribes. Univ. Calif. Publ. Am. Arch. Ethn., 20, 1923.

those of the Alaskan and British Columbian coasts. Unfortunately we need more information about the intervening peoples. An early traveller reports that the Coos Indians of the Oregon coast "burned" the dead, and, like the Plateau Shoshone, practiced widow immolation.[17] But the context of his note makes it seem very likely that "burned" is a misprint for "buried"; I have seen such misprint elsewhere. Yet there may be significance in another early statement, that

> From north to south, in the present California, up to the Columbia River, they burnt the dead in some tribes, and in others, buried them. These modes of sepulture differed every few leagues.[18]

Neither the Chinook nor any tribe north of them, up to the Bella Coola and Northern Kwakiutl practiced cremation. Archeological evidence, however, instances cremation in an earlier culture on southern Vancouver Island; and in earlier days on the Oregon plateau.

UNIVERSITY OF PENNSYLVANIA
PHILADELPHIA, PENNSYLVANIA

---

[17] W. W. Wells, Wild Life in Oregon. Harpers New Monthly Magazine. v. 13. 1856, p. 602. Wells describes the rites.

[18] Taylor's Indianology, *in* The California Farmer, June 8, 1860, cited in Bancroft Wild Tribes, 1: 396.

A NORTHEASTERN CALIFORNIAN DUG-OUT CANOE

By HUGH W. LITTLEJOHN

THE dug-out canoe, shown in plates 59 and 60, was found in Gold Lake, Sierra county, California. For a number of years it had been seen by the people of the vicinity lying on the bottom of the lake under about sixteen feet of water about 150 yards off Fisherman's point on the south shore of the lake. In the autumn of 1925 Forest Ranger Gould hauled the dug-out to the shore, where it remained until the spring of 1926. At that time it came into the possession of Mr. Fenton J. Zehner, who brought it to Gray Eagle lodge, near Blairsden, Plumas county, where it remains at the present time. It was through the courtesy of Mr. Zehner, who is manager of Gray Eagle lodge, that the Department of Anthropology of the University of California was enabled to secure photographs and a description of this dug-out, and to obtain the short and inadequate history given above.

The canoe or dug-out is 20 feet and 8 inches long over all, and is a very massive affair throughout. Its outside width at the center is 27½ inches; 25 inches from the tip of the bow the outside width is 25 inches; 25 inches from the end of the stern the outside width is 26 inches. For the greater part of its length the sides of the canoe are almost parallel. The outside height at the center is 21 inches; the inside height at the same point is 18 inches.

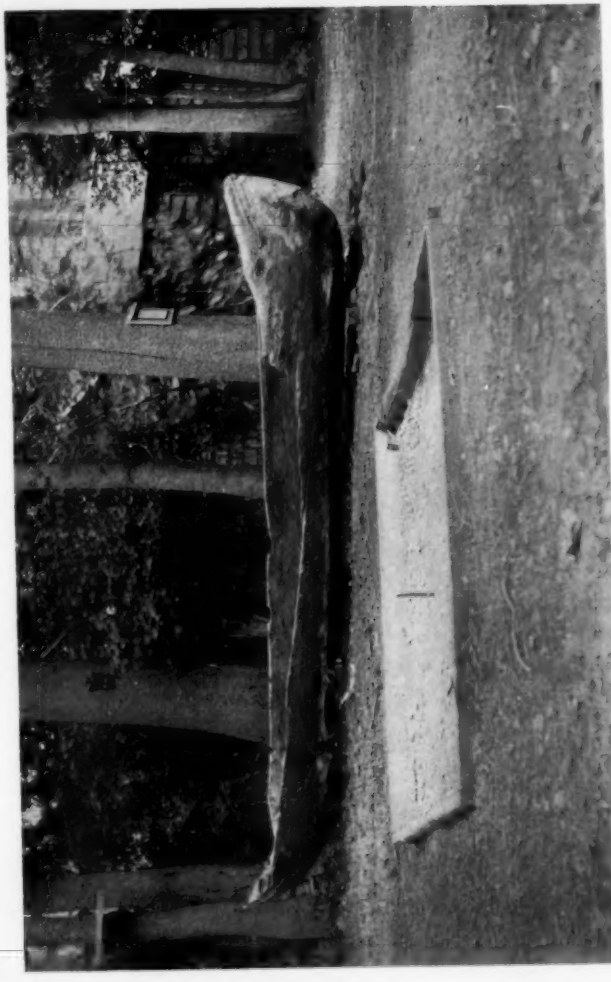
The writer's informant gave the opinion that the log from which the canoe was made came from either a yellow or a sugar pine, but it is a difficult matter to decide, for the wood is badly checked and its character changed from being so long under water. The canoe is in fair condition, the greatest damage being the splitting off of part of the left side due to checking of the wood.

In spite of the evident crudeness of the dug-out, considerable effort has been expended in shaping the bow and the stern. The bow is cut under and brought to a decided point, so that in appearance it is not unlike that of the fisherman's dory used along the New England coast. The stern is shaped so as to appear broad and somewhat flattened, and the curve at the bottom is abrupt, with no tapering as in the case of the bow. The outer surface is so checked and cracked and waterworn that to say that the shaping was done with stone or with metal tools would be a guess.

Inside, the marks of the tool used in shaping the dug-out are very distinct, and from their sharp, deep, and well-defined character it seems evident that they are the marks of a metal adz. Fire was employed in hollowing out the interior, for the sides and especially the ends are still very much charred. A large amount of wood has been left intact in both the bow and the stern, probably for the purpose of giving added strength, and this is largely what gives the appearance of massiveness to the dug-out. The shaping of the sides and bottom has been neatly and carefully done, for the bottom is smoothly and evenly curved to conform to the shape of the log, and the sides are of uniform thickness throughout the length of the main body of the dug-out.

Near the middle of the side which is intact are two places where the edge has been gouged out for the apparent purpose of holding two boards or seats, which doubtless extended to the opposite side, now broken away. The assumption is strengthened by the appearance of the broken ends of rusty iron nails in the places gouged out. The presence of nails in the dug-out would indicate that, no matter what its age, it has been in use at least since the white man came to this part of California. In the stern is cut a deep notch which could have had no other purpose than that of acting as a seat for a rudder, oar, or scull. This notch seems to have been made later than the canoe itself, and it may have been contemporaneous with the gouges and the iron nails on the side, and even perhaps with the deep, sharp adz-marks on the interior.

It is the writer's opinion that the canoe was originally made by the aborigines of the region and that it was later found and used by some white settler, who adapted it to his special purpose. A white informant of some three score years and ten, now living in Blairsden, told the writer that when he was a young man living near Manzanita lake, Shasta county, he and a friend found an old Indian dug-out similar to the one described in this paper. He and his friend were accustomed to do night fishing in the lake, so they rigged a contrivance for holding an iron basket of fire in the dug-out. One man fished while the other propelled the boat from the stern. Something similar may have happened to the dug-out we are describing, and the adz-marks may have been made by



Dug-out canoe found in Cold Lake, Sierra county, California.

Other views of the dug-out canoe.

the white owners who wished to shape the interior of the canoe better to suit themselves. This cannot be stated with any certainty, however, for the canoe may have been hollowed out by the Indians at a time when they knew the use of metal tools.

If the dug-out is of Indian manufacture, to what tribe of Indians did it belong? Gold lake is some 6400 feet above sea level, and according to the writer's Indian informant living near Quincy, the adjoining territory was never occupied permanently due to the severity of the winter climate. This same informant stated that during the summer the Washo and the Northeastern Maidu would go to Gold lake to fish, and that warfare was of frequent occurrence between these two tribes. Mohawk valley, wherein lies Blairsden, was considered as neutral hunting territory, and no one tribe was allowed to appropriate any portion of it for permanent or temporary camps. Moreover, near Lake Hawley, which lies at about the same altitude as Gold lake, but about three miles to the west, there is a large flat rock covered with Indian petroglyphs. That Indians were frequent visitors to the whole of this so-called Lake Basin area is further shown by the large number of artifacts, especially arrowpoints, that have been picked up in this area. Maidu, Washo, Paiute spent their summers fishing and hunting in this Lake Basin area, and, provided an Indian origin for the dug-out of Gold lake is accepted, we cannot say for sure that it was the property of any one tribe more than another.

None of these tribes was prolific in boat-making in any sense of the term, so it is interesting to find such a dug-out canoe coming from a region of long cold ice-bound winters and short summers, where, on account of its weight and bulk it could be used only upon the lake where it was first hollowed out.[1]

UNIVERSITY OF CALIFORNIA,
BERKELEY, CALIFORNIA

[1] Dixon, The Northern Maidu (Bull. Am. Mus. Nat. Hist., 17: 140, 1905) says: The rude dug-out canoes, in use only among the northeastern Maidu, were made from fallen pines, as a rule. A section of the requisite length was burned off, the bark stripped, and the canoe excavated by fire. . . . . The charred wood was scraped off with rough axes or adzes, and the fire kept up till the canoe was completely hollowed out. Elk-antler wedges were used to split trees, being driven by a round hammer-stone held in the hand.

BOOK REVIEWS

METHODS AND PRINCIPLES

Reallexikon der Vorgeschichte. Herausgegeben von MAX EBERT. Elfter Band. (Berlin: Walter De Gruyter & Co., 1927-'28. 445 pp., 151 pls.)

Volume 11 of Ebert's encyclopaedia (cf. AMERICAN ANTHROPOLOGIST, n.s., 27: 561, 1925; 29: 332, 1927; 30: 714, 1928) again provides the general student of culture with a vast amount of valuable reading matter. There are regional surveys of prehistory for Rumania (p. 165, Silesia (p. 269) and Switzerland (p. 384); paleolithic articles of personal adornment are fully discussed by Obermaier under the caption "Schmuck" (p. 292); and substantial treatises cover the history of swords (Sprockhoff, Ranke, Thomsen, Unger; p. 412) and of ship-building (Behn, Thomsen, Assmann, Meissner; p. 235). Under "Schrift," Egyptian writing (p. 336) is treated by Roeder; the Semitic systems and the origin of the alphabet (p. 347) by Johs. Pederson; the several Greek letters (p. 357) by Hiller v. Gaertringen. These and other sections are preceded by a general article from the pen of Thurnwald (p. 314).

The last-mentioned author also contributes comprehensive articles on "Rausch" (p. 39), which besides intoxicants is made to include such topics as shamanistic ecstasy and the sweat-bath, and "Recht" (p. 50), as well as a number of minor ones. It is interesting to recognize as "Scherzbeziehung" (p. 228) our old friend the joking-relationship. Thurnwald has shown considerable aptitude in translating standard expressions of this type into his mother tongue. A few comments on special points seem called for. It is strange that under "Rätsel" (p. 27) Thurnwald fails to emphasize the dearth of riddles in the New World. Possibly his intemperately moderate attitude on the question of their diffusion would have become more positive. ("Der Gedanke von Übertragung ist . . . . . nicht ohne weiteres von der Hand zu weisen"). In the essay on "Rausch," p. 40, he cites Graham (Journ. Polynes. Soc., 254, 1921) to the effect that a Dutch mariner of the 17th century discovered a Chilean beverage, cici, prepared like kava. This point seems to merit further investigation. Finally, exception must be taken to the categorical

statement under "Recht," p. 58, that land is hardly ever owned privately among hunting tribes and pastoral nomads. Since Speck's observations among the Northeastern Algonkians and Seligmann's account of the Vedda that view has become antiquated.

The general discussion of "Religion" (p. 89) by Max Löhr sanely stresses the emotional aspect of belief, the distinction between the Sacred and the Profane, and the importance of individual leadership on the savage level. As a whole, however, the article is inadequate and betrays the author's remoteness from the ethnographic basis for speculation on the subject of primitive religion. The assumption of bodily degeneration among latter-day savages, and the hackneyed juxtaposition of primitive and juvenile psychology, indicate considerable naïveté. On the other hand, the special articles on Aegean, Egyptian, Syrian, and Mesopotamian religion are highly instructive. Thus, it is enlightening to have the gap between Aegean and Greek cult so strongly emphasized by Karo, and to see the anthropomorphic divinities of Mesopotamia set off in relief against Egyptian theromorphism by Unger. Americanists will be interested in Unger's reference to Babylonian berdaches, priests of Istar,

deren Männlichkeit durch Istar in Weiblichkeit umgewandelt ist (p. 121).

The parallel with well-known Siberian cases naturally occurs to an ethnographer.

The reviewer feels particularly grateful for the articles on the reindeer (p. 122), cattle (p. 137), sheep (p. 220), and pig (p. 386). The zoological part is in each case by Hilzheimer, and except for the first of these there are supplementary statements by Ranke on Egypt and Thomsen on Palestine-Syria. Collaboration with a student of culture history as a whole would have enhanced the value of these studies, but even in their present form they are a great boon. That on the reindeer is the least satisfactory, notwithstanding its gratifying moderation, for Hilzheimer ignores important data, e. g., Jochelson's material on Siberia and Russia. He does take cognizance of Wiklund, but adopts Lönnberg's view that the Lapps may have raised reindeer before their immigration into Scandinavia.

"Taurine" cattle are made to include domestic cattle of all varieties *and* the zebu. Unfortunately Hilzheimer does not define his views as to the relations of the zebu to the others. Rejecting various claims, he regards the urus (*Bos primigenius*) as the only taurine wild form, hence derives all domestic varieties monophyletically

from this ancestor. They are products of domestication and can no more be sharply divided from one another than can the races of mankind. Brachycephaly has thus developed independently in quite diverse brands of cattle. C. Keller's theory that the variety *Bos taurus longifrons* (turbary cattle) goes back to the Indochinese banteng is rejected as anatomically indefensible and rendered improbable by the relative infertility of banteng-cattle bastards. The oldest European remains of domestic cattle come from the older kitchen-middens; their racial affinity is as yet obscure. The Swiss pile-dwellings show first the *B. t. longifrons* variety, to which *B. t. primigenius* is only added toward the close of the Stone Age. This, however, must be treated as a result of merely local validity, for the latter race certainly occurs in the Neolithic of Germany.

Hilzheimer leaves the European or extra-European origin of cattle domestication in doubt, but suggests that,

> sei es nun im Anschluss an das importierte Hausrind, sei es spontan, der Ur hier an verschiedenen Stellen domestiziert worden ist.

Historians of culture will be less ready to assume the likelihood of such spontaneous generation.

From Ranke's supplement we learn that prehistoric Egyptian graves contain the bones of cattle, especially skulls and thigh-bones. Reference is made to the Pleistocene find of a urus skull-fragment from the Fayum, which (as Breasted has already shown, eliminates the necessity of Asiatic importation of the domestic form.) Hornless cattle, while not demonstrable for the prehistoric period, figured in the Old Kingdom, the humped variety not before the New Kingdom. Ranke's nonchalant remark that the object of cattle-breeding was the same in Egypt "as everywhere else," viz., milk and beef, betrays a provincial ignorance of ethnographic data.

Wild sheep nowadays occur only in two European localities, Corsica and Sardinia, and belong to the moufflon type (*Ovis Musimon Schreb.*) They are the probable survivors of a wild sheep formerly extending from Asia through Moravia, southern Germany, southern France, and southern England, but became extinct north of the Alps before the close of the Pleistocene. The most ancient remains of domestic sheep known are from the older kitchen-middens. In several of these sites the bones might on purely anatomical grounds be assigned either to goats or sheep; but since the more recent kitchen-middens lack indications of goats, Hilzheimer plausibly argues that

in all these instances sheep remains are involved. The later kitchen-midden finds permit racial identification; they belong to the turbary variety (*Ovis aries palustris*) first noted by Rütimeyer in Swiss pile-dwellings and distributed over Switzerland, Italy, France, Germany, and England. It probably survived the mediaeval migration period and persists in more or less pure form in Iceland to this day. In the Eneolithic a large form with heavy horns, *Ovis aries Studeri*, suddenly made its appearance. It still occurs on the St. Kilda Island Soay. Both these varieties were short-tailed, the long-tailed forms being probably introduced by the Romans. However, even these earlier domestic breeds had longer tails than wild sheep. The Eneolithic sheep, which came to supersede its predecessor, resembles the Anatolian *Ovis orientalis Brant* to such an extent that a relationship is beyond doubt. As to the turbary sheep, not even conjectures are possible at the present time. Hornless sheep do not appear before the Bronze Age.

Ranke points out that the Egyptians never utilized wool. Duerst and Gaillard have distinguished two species,—a fat-tailed type, *Ovis platyra aegyptiaca*, which appears in the Middle Kingdom; and *Ovis longipes palaeo-aegypticus*, which dates back to prehistoric times in Egypt and became extinct before the New Kingdom. Lortet regards it as indigenous in Africa, Duerst and Gaillard derive it from Asia.

Possibly the most startling results of recent investigation in this line appertain to the history of the pig. While the genus *Sus* dates back to the Lower Pliocene of Europe, the species *Sus scrofa* L. is not demonstrable before the Pleistocene, but has persisted since then both in Europe and northern Asia. Its southern limits are difficult to determine because to the south a wild form appears that differs significantly in anatomical features, notably in the shortness of the lachrymal bone. Hilzheimer holds that the various types described under such labels as *Sus indicus Gray*, *S. cristatus Wagner*, etc., in India, Japan, the Malay peninsula, and Indonesia represent a single form. Further, the very differences that divide them from *S. scrofa* distinguish the juvenile wild pig of Europe from its older fellows. Hence, *all* wild pigs of Asia, Europe, and North Africa are, according to Hilzheimer, members of a single group (*Angehörige eines Formenkreises*), the several members merely representing different stages of senescence. Hence the frequency of intermediate forms that defy classification.

The application of recent findings to prehistory is as follows. Rütimeyer had distinguished two species of domestic pig in the Swiss lake-dwellings. Of these, the more recent was evidently traceable to *Sus scrofa* and was accordingly dubbed *S. scr. domesticus*. The other more ancient form differed markedly and was set off as *Sus palustris*, its distinctive features linking it with *Sus indicus*. Since Rütimeyer could not find a wild turbary form and was ignorant of corresponding wild *South* European varieties, he argued that the pig must have been imported from Asia. We now know definitely that the Sardinian *Sus meridionalis Major* is related to *Sus indicus*, and this probably also holds for the Spanish, Italian, and Bosnian breeds. Rütimeyer's conclusions must thus be amended to read: The turbary pig of the pile-dwellings was imported from outside of Switzerland, but not necessarily from Asia. Furthermore, Pira's researches in Sweden have proved that this *Sus scrofa domesticus* precedes the turbary form, which develops from it as a result of domestication before the close of the Stone Age. Even before Pira, Strobel had established similar results for Italy, that is, derived the turbary from the indigenous wild pig. According to Hilzheimer, the effect of domestication is to arrest post-embryonic development at a juvenile stage, whence differences between domestic breeds and their wild ancestors, the effects being overcome only by a more advanced knowledge of animal husbandry.

Wenn aber . . . . das Bindenschwein gewissermassen ein jugendliches Wildschwein ist und das Torfschwein aus dem Wildschwein durch Verjugendlichung entstanden ist, so ist es natürlich, dass sich beide gleichen, eine Verwandtschaft darf allein aus dieser anatomischen Gleichheit nicht gefolgert werden.

In short, Hilzheimer rejects Asiatic importation. Where the turbary pig appears without predecessors, as in Denmark and Switzerland, it must of course have been introduced, but since the pig is not an easily transportable beast we can hardly assume that it came from remote areas. In fact, the author tends to assume several European centers.

Unfortunately editorial limitations seem to have prevented Hilzheimer from envisaging the subject from a broader view, either geographically or historically. Several centers of domestication in his sense do not necessarily imply several independent impulses to bring wild swine under control: the idea may very well have passed from one region to another. An explicit statement as to precisely

how he stands in this matter would have been welcome. Further, the domestication of pigs cannot be considered adequately without some attention to Chinese data, which Hilzheimer completely ignores. Finally, whatever the difficulty of driving pigs over great distances, they can be transported by mariners, as happened in Oceania.

Ranke's supplementary paragraphs bring out two significant facts as to Egyptian swine-raising. There is prehistoric evidence of domestication; but its aims are wholly obscure, since the Egyptians seem neither to have eaten pork nor to have made any other use of pigs.

ROBERT H. LOWIE

An Introduction to Sociology. WILSON D. WALLIS. (New York: Alfred A. Knopf, 1927. xv, 433 pp. $3.50.)

Many books have recently been written by sociologists on anthropological topics. Professor Wallis, with the great advantage, of course, that he is sociologist as well as anthropologist, has returned the compliment by writing an elementary text in sociology.

Wallis' book is "a descriptive interpretation of the social world in which we live." Much more anthropological and historical material is presented than is found in most such books. Indeed, the book is somewhat of a departure in its field. Wallis himself says that

> the approach to sociology adopted in this book turns away from the usual paths, not because they are too well trodden, but because they seldom lead to profitable adventures. The work is an attempt to come to grips with the realities of the social world. It describes forms of social organization, those of our ancestors as well as those of our contemporaries—their social life, institutions, ideals, practice, and theory.

There are six parts to this volume, dealing, respectively, with social life in cultural perspective, social theory, external factors influencing social life, cultural and psychological factors influencing group life, phases and problems of modern society, and the trend of social development. Whether this is sociology in the opinion of the sociologians, *ex cathedra*, I do not know. It is enough, here, to say that this should be a useful and stimulating book to beginning students. It has a sound point of view and it is full of common sense and wisdom. Apart from criticism of details it may be said that it covers too much ground, but that, perhaps, is a fault almost inherent in elementary texts in this field.

MAURICE G. SMITH

Cultural Change. F. S. CHAPIN. (New York: Century, 1928. pp. xix, 448. $3.50.)

The Range of Social Theory. F. N. HOUSE. (New York: Holt, 1929. pp. x, 587. $3.60.)

These two books written by sociologists should interest students of social anthropology. They are worth while in themselves, despite points of weakness and many limitations. They are, however, especially significant as indications of the diffusion of anthropological methods, data, and conclusions, and, many persons will say, also, apart from this, that they are representative of the progress sociology is making.

Professor Chapin undertakes an historical and statistical analysis of cultural change, a topic which among sociologists has largely supplanted the interest in the abstract and general concept of social evolution. After an introduction (part 1) on the perspective of man's past, his book has a detailed analysis (part 2) of certain phases in the social and economic history of Greece, Rome, and medieval England, on the theme that history tends to repeat itself. But his view of history and historical continuity is more like that of Oswald Spengler than like the outmoded view of Lewis Morgan. As Dr. Chapin says:

> The main stream of human culture is found to be something of an abstraction. Morgan and his school seem to have confused this abstract idea of a main or central stream of human culture with the facts of concrete similarities in different areas at different times. In so far as these similarities exist, it would now appear that they are really examples of similar cyclical changes in independent cultural groups and not illustrations of universal cultural stages in one continuous world-wide stream of unified cultural evolution (p. 202).

Historical continuity, as he says, includes separate streams of group cultures, as illustrated in the cycles of national growth and decay. Part 3 of this book is a careful treatment of the character of cultural changes and the societal reaction pattern to the movements of culture, and part 4 discusses the measurement of social change.

Professor House's book surveys a large number of problems and topics from the point of view of their relation to social theory. Its material has been arranged under three headings: Geography and social differentiation (8 chapters); Human nature and collective behavior (17 chapters); and Conflict and social control (10 chapters). A vast amount of work is intelligently and critically discussed.

Though its chief value will probably be as a reference book, Professor House does more than serve as a guide to literature.

Everyone is agreed that sociologists have something to learn from anthropology. May it not be true, also, that anthropology, especially social anthropology, can learn from sociology?

MAURICE G. SMITH

The United States of America. Studies in physical, regional, industrial, and human geography. ALBERT PERRY BRIGHAM. (New York: Oxford University Press, American Branch, 1927. x, 308 pp. $3.00.)

This may be a useful book, but it appears to this reviewer to be only another version of the usual material found in geography books, save for some general and patriotic remarks about Americans in the concluding chapters. Its utility is increased by its 40 maps and its statistical appendix consisting of 16 tables.

The author, who is Professor of Geology at Colgate University, says in his preface:

> This volume is based on a course of lectures given at the University of London in February, 1924. The University Press kindly asked the author to include additional subjects and offer a short text suited to the later secondary and earlier University years. This volume is not to be taken as a geography of the United States—it is a series of studies in important phases of American geography.

Since this book was prepared for Englishmen, Dr. Brigham emphasizes, in his chapter on traditions and language as well as elsewhere, how English we are. He goes so far as to say that "even the anti-British American is often, without knowing it, British in his basal ideas of life and conduct" (83).

While there is, therefore, much in the book that will please our 100 per centers, there are also some things Dr. Brigham tells that, truth or no truth, will be unpleasant to these ladies and gentlemen. For example, speaking of our first settlers, he says:

> Added to these [seekers for freedom and restless, progressive spirits] were undesirables, of whom London and other places were well rid, and many criminals as well; but here we are to remember that many were not guilty of turpitude, their offenses might be legal but not moral, and in many instances they, and their children, were of good stuff for American citizenship (2).

Of our people in 1790, he says:

> There was diversity among the Britons—Puritans, Cavaliers, Quakers, educated, ignorant, poor and affluent, men of highest character, and un-

desirables of the populace, for it is a fallacy to assume that the first colonists were all supermen (84).

Something of Brigham's point of view toward anthropological subjects can be gathered from his discussion of the Indian under the caption, An Empty Land, in his first chapter:

> Vivid and vigorous as the red savage was, he made little ultimate impression on American life. He is now in the process of absorption in the white and negro population, but the infusion is too small to be of account. He has produced no significant result in race or in institutions. He tested the colonial fibre and bred in the pioneer alertness, determination, and not infrequently, revenge. His presence for some generations kept the eastern colonists in compact settlements, and this condition had important social as well as protective results . . . . .
>
> There were economic gifts also, for early engineers had much occasion to use the trails long trodden by men who had an almost superhuman sense of direction and locality. Tobacco has affected America and the world and Indian corn was the indispensable condition of survival for some of the first settlers and is today one of the three leading products of American soil. If we add the fur trade, we have, perhaps, a fairly full catalogue of the red man's contribution to American history (5, 6).

Chapter 5, The Racial Composition, is perhaps of special interest to anthropologists in illustrating how geographers handle such a topic. Here, as might be expected, nationality is usually treated as race. It is asserted in this chapter that the old stock of Americans "are not dying out, and under existing restrictions, is not in danger of being submerged" (83; see also 92). There are also some platitudinous and only partially true remarks about the restriction of immigration:

> Americans in their new views of immigration make no assertion of the superiority of any race or nationality. There is no national egotism in the minds of thoughtful students of the problem, however much loose talk there may be about "Anglo-Saxon" superiority. And it should be observed that Latin and Slav were not so influential in bringing us to present views as were the ruling classes of central Europe [*sic*], who are not so far from us in blood. We may sum up the American conviction by saying that in its newer attitude it demands loyalty, and reasonable health and strength of mind and body (98).

Let me close this notice by indicating how, as it seems to me, preconceptions confuse writers who deal with the social as well as the biological. Writing of our recent immigration, Professor Brigham says:

> Large masses of raw human material cannot safely be transformed by any process known under the rather vague name of "Americanization."

If we let in aliens that are basically inferior, the biological argument comes into force—what goes into the social fabric must come out; in other words, we are dealing with heredity, and environment and training will not create power or efficiency (98).

Writing of an alleged gulf between Americans and Britons, he says:

If Americans are different from Britons, it is not because of recent floods of aliens, but is due rather to the fusions of two hundred years and to influences of history and environment (83).

MAURICE G. SMITH

Dacia; an Outline of the Early Civilizations of the Carpatho-Danubean Countries. VASIL PARVAN. (Cambridge University Press, 1928. 204 pp., 16 plates, 1 map.)

The late prominent Roumanian scholar, Professor Vasile Parvan, had delivered a series of lectures on the early civilization of southeastern Europe at Cambridge University shortly before his death in 1926. As a memorial to his visit, the Cambridge University Press published *Dacia*, which is based upon Parvan's lectures and translated by Evans and Charlesworth, both of St. Johns College, Cambridge. The five chapters of text treat of the relationship between the Carpatho-Danubians and the Villanovans, the Scythians, the Greeks, the Celts, and the Romans respectively, considering both the cultural and the racial aspects.

The treatment starts with the third period of the Hungaro-Roumanian Bronze Age (about 1000 B.C.) and describes the industrial products of Dacia as being derived from the west rather than from the east. A northern branch of the Thracians were the native ethnic elements. The fourth Bronze period (corresponding to Hallstatt I of central Europe) marked the advance of close cultural contacts with northern Italy and the Illyro-Celtic west.

The Villanovans, therefore, constitute the first Italic wave in Dacia (p. 34).

The nomadic Scythians appeared about 700 B.C. While they had a disturbing influence upon the highly agricultural native economy, and for some 150 years interrupted western relations, they nevertheless did not cause any break in the cultural development of Dacia.

The subsequent influence of the Greek civilization was quite extensive, but not prominent enough to stamp Dacia with a specific

Daco-Hellenic culture for the western contacts continued to constitute the predominating elements.

In the fourth century B.C. (La Tène I) the Celts began to appear and during the La Tène II period, they spread throughout the Daco-Thracian territory. To them is attributed the introduction of the potter's wheel and money coinage in Dacia. At the same time the penetration of southern traits, Hellenic and Italic, is strongly felt, but . . . . .

> the Dacians nevertheless remain an essentially northern people during this Celtic period (p. 140).

In the La Tene III period relations with Rome were more preponderant than with Greece. At first the Celts were the intermediaries in the Daco-Roman contacts, but the intercourse was soon direct and "had lasted for some centuries before Trojan" (p. 160). Gradually the whole of Dacia and virtually the entire territory of the old kingdom of Burebista came under Roman influence. Dacia was always a highly agricultural country. The Romans, aside from introducing the Latin language brought

> practically nothing that was new to the natives. The industries of the La Tène period, for instance, continued uninterrupted during the Roman occupation and even after their withdrawal (p. 199).

The Latin elements, which even today are present in the Danubean region, are considered by Parvan as being "derived directly from the old Danubean population" (p. 200).

The Romano-Danubean cultural unity held its own until the time of Slavonic invasions. The pastoral Dalmatia and Moesia Superior were the first to submit to the Slavs. Dacia and Moesia Inferior, however, resented this until the tenth century, when they finally gave way to the Slavs, Magyars, and Germans.

Thus today, Roumania, instead of forming a contiguous peninsula of the Latin mainland, is only an isolated inland island, quite remote from her Latin kinsmen.

The book in the main appears to be based on Parvan's extensive work *Getica, o Protoistorie a Daciei*, Bucharest, 1926. It is necessarilly sketchy, but will, nevertheless, be appreciated by the American student of European antiquity. The 16 plates and 1 map are a good feature of the work.

VLADIMIR J. FEWKES

ASIA

Oraon Religion and Customs. SARAT CHANDRA ROY. With an introduction by Colonel T. C. HODSON, Reader in Ethnology in the University of Cambridge. (Ranchi, 1928, 418 pp.)

In 1915 Sarat Chandra Roy published an excellent volume on *The Oraons of Chota Nagpur* in which he presented their history, economic life, and social organization. At the time he promised at a future date to supplement this work by one dealing with Oraon religion, and in the volume at hand this promise is made good.

The first chapter deals with religion and magic and their place in Oraon life, the author making his modern position very clear. The Oraon, he says, does not attribute all phenomena of nature and all the good and ill of life to spiritual agencies. He realizes that natural causes and his own efforts may ordinarily produce definite desired results. His accumulated lore based on observation of these constitute his rudimentary science, and he counts upon its regular and uniform working. But he finds exceptions to the expected and normal, and to avert these unforeseen contingencies or neutralize their effects he has recourse to magical and religious rites. His magic begins where his primitive science ends, and is subordinated to and supplemented but not actually supplanted by, his religion. By way of precaution he has come to employ these rites in conjunction with his normal activities, to ensure that their course may run smooth.

The following chapters are concerned with the careful study of the deities, spirits, and other supernatural powers, the "rites du passage," religious feasts and festivals, and black and white magic. The final chapter deals with revival movements and modern tendencies in Oraon religion, and contains many details of interest in regard to this often neglected aspect of the subject.

The Oraon present a very attractive field for study. A Dravidian tribe which supplanted and is still largely surrounded by more primitive Munda-speaking folk, subject for centuries to Hindu influences and for over eighty years an active center for Christian missions, they offer rather unusual opportunities for the study of complex cultural blending. To say that the author has realized these opportunities and has organized and presented his materials with skill, clearness, and sanity is to state rather inadequately the service which this "modest and accomplished scholar" (to quote from Colonel Hodson's preface) has rendered all students of Indian anthropology.

R. B. DIXON

The Japanese Enthronement Ceremonies. D. C. HOLTOM. (Tokyo: The Kyo Bun Kwan, 1928. x, 146 pp. Yen 4.50 in Japan.)

Historian and student of religions, Dr. Holtom does not style himself an ethnologist. Nevertheless, ethnologists are in his debt for researches into Japanese religion and ceremony. Students of Japanese culture have wished that his *Political Philosophy of Modern Shintō* might be followed by a comprehensive book on Japanese religion, embodying the fruits of his field work and documentary researches. Although that wish remains unfulfilled, this monograph on the Enthronement Ceremonies is of value to ethnologists.

The Enthronement Ceremonies of 1928 attracted world-wide attention. Because Japan's Emperor acknowledges no peer, the ceremonies cannot be called a "coronation," lest one imply the existence of a power capable of conferring a crown. Portions of the ceremonies have survived from prehistoric days, and the Imperial Household Department has meticulously recorded changes in the ritual during historic times. It is thus possible to gain insight into primitive Japanese ceremonial.

Holtom describes the Imperial regalia, emblems of authority, incarnations of Divine power. He outlines the ceremonies, describing in detail the two most elaborate portions of the cycle. The accession of a Japanese Emperor involves three principal groups of ritual acts. First, and basic, is the transfer of the Three Sacred Treasures or Imperial regalia to the new Emperor, immediately upon the death of his predecessor. Possession of these Divine objects is emperorhood. This transfer, carried out with simple dignity during the mourning period, effects the actual establishment of the new Emperor.

The year of mourning must be completed before the elaborate formalities of the second and third ceremonies may take place. New rice, planted after the mourning ends, is indispensable to the final ceremony; hence two years or longer may elapse before the completion of the rites. The first ceremony has given Japan an Emperor in fact—the second and third proclaim, consecrate, and celebrate the Enthronement.

Detailed accounts, in English, of these ceremonies, are of especial value in connection with the theories recently advanced by Hocart (in *Kingship*). Whatever controversies Hocart may have provoked, he has effectively called attention to the importance of study of cor-

onation rites in the Eurasiatic area. Perhaps Holtom's apparent unfamiliarity with Hocart's work enhances the value of his study of the Japanese rites; he is obviously not seeking to discover Hocart's coronation-complex in the Japanese data. The description of the Enthronement ritual is quite objective, with only a few casual references to parallels in other regions.

Holtom's neglect of the rôle of diffusion from areas other than China results in the passing over of important cultural interrelations, but it also means that his data are free from the theoretical bias of the enthusiastic diffusionist. While Chinese elements in the Japanese rites are freely acknowledged, those portions of the ceremonies that seem to indicate diffusion from India, the Malay region, or the Pacific Isles, are described without directing attention to such possibilities. Dr. Holtom was among the first to stress the Malayo-Polynesian element in Japanese culture, and his reticence at this point is puzzling. His citations of Asiatic cusoms indicate an attitude sympathetic to theories of independent origin. Happily, his theoretical assumptions are few and may be disregarded with no impairment of the value of the study.

A critically historical investigation of matters related to the dignity of Japan's Imperial House requires tact, even courage. Dr. Holtom evades no issues, handling the stiuation with skill and dignity. No patriotic Japanese could find just ground for offence. More serious than possible censorship has been the limitation of space; greater detail in describing ceremonial paraphernalia would have been welcome.

The Imperial regalia are shown to function in what Hocart would term a "solar kingship" ritual. The mirror incarnates the sun-goddess, Amaterasu; the sword is identified with the lightning of her storm-god brother Susa; while the jewels incarnate the moon-god Tsukiyomi, another brother of the sun-goddess, and ruler of the "ocean plain." These jewels strikingly resemble the *mana*-bearing curved stones of the Maori, a fact unnoted by Holtom. The regalia unite a three-fold Heavenly Sovereignty, transferring the powers thus summated to the Emperor. Significantly, ancient records refer to the Japanese Imperial Dynasty as "Hitsugi," literally a "light-succession" or "sun-succession." Holtom interprets the phenomena as a "totemistic conception of human origin and relationship." Would he hold to this interpretation if he had considered the possibilities of diffusion, or if he had taken into account the analyses of

totemism set forth by Lowie and Goldenweiser? There is an uncritical, though reserved, acceptance of Frazer's theory of magic as false association of cause and effect. Nevertheless, the interpretation of the Regalia, as objects containing supernatural power, is sound:

> Something must be found outlasting the brief lives of individual men, whereby the *mana* . . . . of the dynasty may be safely carried across the break of death. For the solution of this great problem man has turned to the magical operation of the regalia (p. 10).

The modern function of the regalia is used to illustrate a theory previously endorsed in Holtom's writings:

> The history of the Japanese regalia also illustrates another important principle of human social evolution, namely, that objects and rites whose original functions are magical, become at more advanced cultural levels, the symbols of higher ethical ideas (p. 50).

Such processes have indeed occurred in many regions; still, one might hesitate before postulating a principle of human social evolution.

The descriptions of the three main parts of the cycle of Enthronement Ceremonies are excellent. The first, the Senso, is the accession, with transfer of the Regalia. The second, occurring later, is the Sokui-Rei, or Ascension of the Throne, adopted from the Chinese. The third, the Daijō-Sai or new-food festival, receives Holtom's major attention, as the core of the ancient Japanese ritual.

> In it are merged a primitive harvest festival, and survivals of the original Japanese Enthronement rites (p. 95).

Holtom thinks that the eight-legged table bearing a branch of the *sakaki* tree represents the original form of the Shintō shrine. This *himorogi* (illustrated on p. 98) is worshipped in the course of the Daijō-Sai. Comparative data on places of worship throughout Indonesia and Polynesia might illuminate this point, for so much of the Daijō-Sai is reminiscent of South Sea culture. There is a brief, clear description of the tortoise-shell divination as now practised; an equally good account of the tying of the Emperor's life cord to insure the presence at the ceremony of all four of his souls.

The meaning of the Daijō rites is found in the divine status of the Emperor. The Spirit of the Rice, essential to the nation's food supply, is magically transferred to the Emperor's person, for safe preservation in this most sacred of beings. This theory contrasts with Hocart's

interpretation of the relation between "Solar Kings" and the food supply.

Original contributions are embodied in Holtom's interpretations of the Daijō-Sai, and of the duplicate shrines used in that ceremony. Writing in the Jiji Shimpō (Tōkyō Daily Times), Dr. Genchi Katō of the Tōkyō Imperial University says;

> The author makes good use of the expositions of our historians and thereby avoids falling into conjecture, and at the same time out of his own original study he advances new interpretations of the Daijō-Sai and the nature of the Yuki and Suki shrines. . . . . Speaking from the standpoint of a Japanese I am grateful that Dr. Holtom has published this excellent book wherein our Enthronement Ceremonies are so well explained to foreign readers.

Holtom has skillfully oriented the ceremonies in the life of modern Japan:

> . . . . the Sokui-Rei and the Daijō-Sai . . . . are the two major movements of a great Imperial symphony (p. 141).

The book is printed on double pages, bound in old Japanese style, and contains among its illustrations three excellent specimens of block printing in color. Scholarly readers will miss bibliographies and index. The work well meets its purpose, the furnishing of a guide for the more discriminating, scientifically-minded visitors to the Enthronement festivities.

DOUGLAS G. HARING

Papers on the Ethnology and Archaeology of the Malay Peninsula. IVOR H. N. EVANS. (Cambridge University Press, 1927.)

This small volume consists of papers on the pagan races of Malaya, on Malay beliefs, on Malay technology, and on some of the antiquities of the peninsula. Mr. Evans is in the custom of republishing his technical papers in book form. The present volume consists of papers published since the appearance of his very valuable book, *Studies in Religion, Folk-lore and Custom in British North Borneo and the Malay Peninsula.*

P. Schebesta has recently renewed our interest in the Semang of the Malay peninsula by the technical and popular publication of the results of his field work. Unfortunately this author has neglected to make even an elementary comparison of the Semang culture with those of their neighbors, the Sakai and Jakun. This gap can to a great extent be remedied by a perusal of the two volumes by Mr. Evans. It appears that the *hala* or medicine men, the *cenoi*, their

guardian spirits who possess them, the *pano* hut, where the *hala* hold their séances, and the ability of the *hala* to turn into tigers, are all ideas common likewise to the Sakai, and probably taken from them. Even the idea of a thunder god who demands blood sacrifice at the time of a storm, is common to both peoples.

It is very difficult to say just what are the aboriginal customs of the Semang. Mr. Evans lists the following customs and ideas as characteristic of the Semang:

(1) That a bird-soul animates the foetus in pregnant women.
(2) That children are named from the kinds of trees near which they were born, or from the nearest stream.
(3) That dart-quivers are decorated with magical patterns which by sympathy render the game tame. (P. 143).

The first point still remains uncertain, since it was not confirmed by Schebesta. Schebesta claims that the idea is of Malay origin. (Bei den Urwaldzwergen von Malaya, p. 96. Leipzig, 1927.) The third point is probably ancient Malayan, and not Negrito. The arrow quivers of Mentawei have also magical bead designs which, I was told, are for the purpose of attracting the game.

E. M. Loeb

AFRICA

Some Nigerian Fertility Cults. P. Amaury Talbot. (London: Oxford University Press, 1927.)

With this little book, the contents of which concern the fertility rites and practices of the Ibo and Ijaw tribes of southern Nigeria, Mr. Talbot again places ethnology under his debt. For in it he gives us a careful and detailed account of the ceremonies which go to celebrate the importance of the great Earth-Goddess, Ale, the goddess of fertility who is of such moment in the lives of these people. Although the subject is one that has been touched upon in his massive *Southern Nigeria*, it is nowhere treated with the detail which is accorded it here. The facts recorded were gathered by Mr. Talbot in the course of his duties as district commissioner in 1914, when he had to travel extensively and when, as this book testifies, he made good use of his opportunities.

As in *Southern Nigeria*, Mr. Talbot is prone to ascribe perhaps too great an influence to the Egyptian civilization, and to read universal implications into the ceremonies he describes, as his references to Greek mythology indicate. Aside from that, however, the actual data contained in his book are of value for the light they throw on

the processes of religion and of sympathetic magic among the natives of Nigeria. Whether or not with this cult of the Earth Mother and the Sky Father

> by whose fecundative showers her fruition is brought about, (and) of the kindly ancestors, whose spirits watch over their descendants and aid in the sending of rich harvests,—lastly, and most intimately of all, by sympathetic magic through that mysterious link thought to lie between the generative organs, both male and female, and the fruitfulness of the animal and vegetable kingdoms—the innermost workings of primitive minds may, in a measure, be reached at last

is something open to question. But that the material he gives us is suggestive in the extreme in view of the theoretical vistas it spreads before us cannot be denied.

He begins his account with the story of the great drum of Ihie, one like that destroyed by the Resident as punishment for the natives having sacrificed government runners to it shortly before he observed this one. This drum was carefully carved, and on it, besides the great serpent, symbols of the crescent moon, of a Juju horn, and of what was either a double-headed axe or an Ibo musical instrument, was an object simultaneously interpreted as a tortoise and as a representation of "the labia majora, with the clitoris showing between." Although there was some disagreement among the natives about this, it seemed evident that, in any event, to the natives

> the tortoise herself symbolizes the feminine generative organs, just as the serpent is well known to typify the phallus.

And here, Mr. Talbot thinks, he finds a clue to the puzzling presence of the impaled tortoise which is to be seen in front of most Jujus, and adds that

> although the snake is recognized by anthropologists as the phallic emblem, no widespread feminine symbol of like significance appears to have been known here hitherto.

With this clue to go on, Mr. Talbot began to find more and more evidence of the importance of the tortoise in this connection. In the Mbara house at Obogwe, which is built in two sections, one dedicated to the Thunder God and the other to his spouse the Earth Goddess, the serpent was found in the shrine of the male deity, but the tortoise alone in that of the female. If we are unwilling to go with Mr. Talbot in his extension of his hypothesis to the importance of the tortoise in West African folklore for its cunning and its final supremacy over

the other animals, we must at the very least grant him a stimulating suggestion.

He then proceeds to discuss the Mbari houses, shrines dedicated to these two deities. That the goddess of Earth is a symbol of the utmost importance to the people cannot be doubted. She stands for the satisfaction of the two great instinctive needs, food and reproduction. And it is not without interest, as the author tells us at some length, that in all the shrines figures are found depicting "license in the most blatant form"; that is, figures depicting the violation of the four principal sex taboos that no native would dare violate. In some of the houses, again, there are representations of humans performing sexual acts of a pathological nature.

After a consideration of the relationship between the Earth Goddess and the Sky God who is so jealous of his domain that "it is forbidden to a woman to climb to any height," and who

> often sends his lightning to strike tall trees or hill tops because he is jealous of all things which seek to raise themselves near to his kingdom,

the author proceeds to a further consideration of the manifestations of the fertility cult. That the phallic cult is very strong is evident from the information given. The Ibudu, or representations of the genital organs, are to be found everywhere, and stand for both the male and female, the latter being bell-shaped, with the coiffure denoted which only a woman who has borne a child may wear. They vary in shape, but that they are greatly potent is shown by the accounts of the manner in which the girl about to be married must ceremonially partake of the potency of the Ibudu so that it will grant fruitfulness to her and let her have "many piccans." In the western part of the district over which Mr. Talbot was placed at the time, the cult takes on rites which are an extension of those mentioned above. Here an Eku, or representation of the phallus, is erected every year by each girl who is not yet married but has reached puberty. Failure to do so would result in infertility. These pillars may be plain, or decorated in bright colors, and they are also thought analogous to the formations of hard clay to be found in the bottom of the large ant-hills, which are also regarded as potent in making for fertility.

We have further accounts in the last two chapters showing how this passion for fertility dominates the ceremonial life of these people. The yams must be planted at certain times, and the greatest yam is kept to insure the magical reproduction and success of the

rest of the crop. The ceremonies which go with the seasons of harvest and planting are described, and the extent to which sympathetic magic plays a part is made highly apparent. The account of the ceremonial wrestling, where the wrestlers must finish their combat quickly lest they become tired and thus mar the power of Mother Earth to propagate is only one facet of this aspect of the matter. The strict taboos on sexual contact anywhere except in a town, the ceremonies which must be undergone before a town can be declared to exist in what was the bush, bring out these points, while the importance of the ancestors, so manifest in all of Africa, is shown finally to have its close connection with the worship of Ale.

Mr. Talbot has given us material of which there is relatively little from Africa. It should be of value, however, not only to the Africanist, but to all those interested in the psychological processes of association between the functions of the organs of sex and reproduction and the symbolic representations which are given to them, and the manner in which the preoccupation with the maintenance of the food supply and of the tribe through reproduction by the earth and by man is interrelated with the other aspects of social life.

MELVILLE J. HERSKOVITS

The Bantu Tribes of South Africa, Reproductions of Photographic Studies. A. M. DUGGAN-CRONIN. Vol. 1, Section 1, Plates 1–20, *The Bavenda,* with an Introductory Article on the Bavenda and Descriptive Notes on the Plates by G. P. LESTRADE, M. A. (Cambridge: Deighton, Bell & Co., Ltd. Kimberly: Alexander McGregor Memorial Museum, 1928.)

This volume is the first of a projected series of photographic studies dealing with the various Bantu-speaking tribes of South Africa. The origin, history, and culture of the Bavenda are briefly but adequately described in an introductory chapter. The sections dealing with native social and political organization and with their ideas of justice and forms of legal procedure are unusually clear and concise and contain much information of general interest. An excellent Bavenda bibliography is also given. The twenty plates illustrate native houses, costumes, industries, dances, and ceremonies together with a fine series of portrait studies showing the various physical types. The whole forms a valuable record of the rapidly diasppearing native culture.

R. LINTON

OCEANIA

Polynesian Religion. E. S. CRAIGHILL HANDY. (Bernice P. Bishop Museum, Bulletin 34. Pp. 342. Honolulu, 1927.)

It is more than a century and a half since the study of Polynesian ethnology began. Indeed the very beginnings lie earlier still in the observations, usually meager, of the Spanish and Dutch explorers. Incomparably greatest of the explorers is Cook, in the accounts of whose voyages is to be found a great amount of first class material. Following the explorers there came a generation of missionaries and traders typified by Orsmond, Ellis, and Moerenhout, after whom, for half a century, there are hardly any notable names except the dictionary makers. A new era dawned with Emerson and Fornander in Hawaii, and a group in New Zealand, including Williams, Tregear, Percy Smith, and Elsdon Best, the last-named the greatest field worker the Pacific has seen. Lineal descendants of these New Zealanders are Fox, of San Cristoval; Jenness, whose work began in Melanesia but has since moved to the American field; Te Rangi Hiroa (P. H. Buck); and others— two among them field workers at the present time in Melanesia. On the Hawaiian side is a notable group—Stokes, Emory, Linton, the two Handys, Miss Helen Roberts, Dr. Margaret Mead, Loeb, Sullivan, Gifford, and McKern. They hail, with one exception, from the universities of the United States, and have been drawn into the Polynesian field through the agency of the Bishop Museum. They have worked systematically in all the more important Polynesian groups with the result that the main problems of Polynesian ethnology are now emerging.

Dr. Handy's book on Polynesian religion is the first of the general works of the American group: indeed it has had only two predecessors in its class in the whole field—Tregear's *Maori-Polynesian Comparative Dictionary* and Williamson's *Social and Political Systems of Central Polynesia.* Handy spent three years at Harvard working over the literature relating to Polynesia and then five years in the field in the Marquesas and Tahiti, with briefer contacts with native life in Hawaii and Samoa. His book is a great achievement, laying a broad foundation for all future work in its field. His opening section deals with the philosophy of Polynesian religion. This is followed by sections on deities, on modes of worship, on rites, and finally on "Ethnographic Considerations." To readers other than specialists in the Polynesian field, the last will probably prove the most interesting section. Despite

a crowd of interesting problems arising earlier in the book, the present review must confine itself to Handy's broad conclusions. In his view the analysis of Polynesian religions in the various groups reveals their composite nature. There are, first, those elements that belong to an ancient foundational system. These are distinguished by their fundamental nature in relation to Polynesian culture as a whole, their universal occurrence, their uniformity, and their existence in more clear-cut form on the periphery of the area, i.e., in Hawaii, the Marquesas, and New Zealand. These elements Handy terms Indo-Polynesian, since their sources are to be found in regions long dominated by Indic influence.

Second in importance is a group of elements predominant in that part of Polynesia,where Tangaloa was regarded as Supreme Being and divine ancestor, i.e., Samoa, Tonga, and the Society islands. These elements are regarded as a recent cultural intrusion. In contrast to the Indo-Polynesian elements they are highly variable and are least pronounced in the islands on the periphery.

In the third group of elements are other, later, intrusions and borrowings of secondary importance from neighboring cultural areas—Melanesia and America.

There is nothing new or startling in Handy's derivation of elements in Polynesian religion from an Indic source, since such a source has often been suggested by students of Polynesian religion and culture. Such a derivation seems probable though there has not yet been a marshalling of facts numerous enough to constitute a demonstration. The element of startling novelty is evident, however, in Handy's second group, or rather in his derivation of this group from southern China. The river people in that region are called Tan-kah-lo and this name Handy equates with Tangalo or Tangaloa, supreme deity in Samoa, Tonga, and the Society group. The evidence in support of this identification is by no means convincing, but this should not prejudice the case, for the nature of the present work forbids the mustering of any large body of evidence on this particular point. The equation of Tan-kah-lo and Tangaloa is unconvincing, but the derivation of elements of Polynesian culture from south China is far from impossible or even improbable. There are a number of elements in the material culture of the American Northwest Coast, which seem to be allied to elements in Polynesian material culture, and if this alliance is real the common ancestor of both may well have been south Chinese.

Handy's derivation of Polynesian culture elements from America

would be equally startling had he not prepared his colleagues for such an alliance by an earlier paper on the point. The elements in question are the general and extensive use of stone in building temples, the cult of human sacrifice, and the importance of processions in ceremonials. Points of such generality are not likely to prove convincing to the majority of students.

Lest these criticisms should be thought to affect the essential merit of Dr. Handy's book the reviewer hastens to say that he would place it first in merit among general works on Polynesian culture. It will be constantly in the hands of all future students.

H. D. SKINNER

Ethnology of Polynesia and Micronesia. RALPH LINTON. (Field Museum of Natural History, Department of Anthropology Guide, part 6. Chicago, 1926.)

This little handbook of Polynesia and Micronesia is primarily intended for the use of visitors to the Field Museum, and thus, the emphasis is directed towards the material culture of the regions described. Because of the size and general nature of the handbook, however, it can doubtless be used to give the elementary student of anthropology a first view into the culture of Oceania.

Some slight corrections might be noted in the generalizations on the absence of traits in Polynesia. Thus Linton writes that the dog was present everywhere in Polynesia and Micronesia except Easter island (p. 30). He further states that pigs were present everywhere in Polynesia, except New Zealand and Easter island (p. 31). Again

> Nearly all the Polynesians drank kava, but it was not used in New Zealand or Easter Island (p. 48).

In correction I may state on my own authority that the dog was originally absent in Niue, and on the authority of Shand, that the dog was originally absent in the Chatham islands. The pig was originally absent in Niue, and, of course, likewise absent in the Chatham islands. According to the traditions of Niue, kava drinking was originally unknown to the island, and the present day natives do not partake of it. Kava drinking was unknown in the Chatham islands. It might also be added that the sweet potato, or kumara, was originally absent in both Niue and the Chatham islands.

The fact has recently been reiterated by Margaret Mead (AMERICAN ANTHROPOLOGIST, n.s., 30: 152, 1928) that the cultures of Niue

and the Chatham islands bear certain resemblances, viz., the absence of tattooing and circumcision, and the presence of canoe burial in both regions. The absence of so many important material culture traits in both Niue and the Chatham islands appears to me to lend support to my original contention that the natives of Niue represent an archaic branch of the Polynesian race, and the same statement might be made of the Chatham islands. Miss Mead is inclined to the opinion that the attenuated culture of both the Moriori and the people of Niue is due to early migrations having been made without the guidance of well-informed leaders. Yet even the polloi of Polynesia would have remembered to bring along the pig, dog, and kumara. (The absence of the kumara in the Chatham islands may be due to the cold climate.)

E. M. Loeb

MISCELLANEOUS

Folklore in the English and Scottish Popular Ballads. I. C. Wimberly. (Chicago: The University of Chicago Press, 1928, pp. xiii, 466.)

In this elaborate treatment of the folkore material in the popular ballads of England and Scotland the author gives us a very useful book which will be of great help both to ballad students and to folklorists. It would be impossible to enumerate here the many interesting instances of heathen lore in ballad poetry. I only wish to call special attention to the important chapter on the material ghost or the living corpse, a chapter in which this pre-animistic notion is shown to have been present in the popular ballads.

Nevertheless the numerous instances of heathen notions and practices do not prove that the ballads themselves reach back into an age which is purely heathen. They might be, and in fact they are, survivals in modern folklore and therefore they give no valid indication for the high antiquity of the ballads. The author argues in an opposite sense, but I am of the opinion that the popular beliefs and customs, although they find their counterparts in savage thought and practice, do not give sufficient proof for believing that the ballads reach farther back than medieval literature.

There are some further objections of a more specific sort that I should like to make. It sometimes happens that the author adduces no sufficient evidence for primitive customs in ballad poetry. What he says about totemism (pp. 66 ff.) and the couvade (p. 124) is not convincing at all. The practice, mentioned in ballad poetry, of laying

a green sod on the breast or some other part of the corpse is not sufficiently explained by reference to the strange connection between green color and death. The practice seems to me to be the result of the widespread conception that the dead members of the clan or family are intimately connected with the fertility of the soil. Furthermore, I think it highly improbable that the flower-burdens are to be considered as survivals of magic incantations. A stanza like the following in "Lady Isabel and the Elf-knight" (Child No. 4):

A 1 Fair lady Isabel sits in her bower sewing,
Aye as the gowans grow gay
There she heard an elf-knight blawing his horn.
The first morning in May

clearly points in another direction. We find here a lyrical song of the conventional type (describing the blessings of lovely May), which has developed into a very characteristic burden, equally well known in Scandinavian balladry. The rose, thyme, rowan, and broom are not magic at all, but simply denote the delightful children of spring.

The blood-smelling giants are no traditional representatives of actual cannibals. They clearly belong to the Otherworld. In Indonesian folk-tales the ghosts are made aware of any human intruder by the strong and disagreeable smell which emanates from his body. Hence the giant is not the successor of an aboriginal cannibal, but he is a terrible and magnified "draugr." The commingling of otherworld creatures, ghosts, fairies, dwarfs, and witches, is another striking example of the relatively young stage of development found in the heathen lore of the ballads.

JAN DE VRIES

LEIDEN, HOLLAND

Von Seele und Antlitz der Rassen und Völker, Einführung in die vergleichende Ausdrucksforschung. LUDWIG FERDINAND CLAUSZ. (München: J. F. Lehmanns Verlag, 1929. Paper 10 marks, bound 13 M.)

This is not Clausz's first book in the field. He has written three others[1] besides several articles, but nowhere has he made his purpose and method as clear as in this.

[1] Die nordische Seele. Artung, Prägung, Ausdruck. Max Niemeyer, Halle. 1923. Rasse und Seele, eine Einführung in die Gegenwart. J. F. Lehmanns Verlag, München. 1926. Fremde Schönheit, eine Betrachtung seelischer Stilgesetze. Niels Kampmann Verlag, Heidelberg. 1927.

Clausz does not believe that the usual methods of anthropologic measurements can determine the essential differences between races and peoples. He does not seem to object to anthropometry as such, but he conceives the essential differences to be not of form, but of manner.

Clausz differentiates between *Stil*, *Ausdruck*, and *Anlage*. *Stil* is that manner of reacting to the outer world that underlies all of an individual's actions. *Ausdruck* is the expression which accompanies the action, and the physiological correlate of *Stil*. *Anlage* is the relation of *Ausdruck* to *Stil*.

The *Stil* of a race or individual is permanent, fixed from birth to death; it is to him, consciously or unconsciously, the essential value of his life. The desire to mold the objective world to his ideals, the wish to impress others, the free surrender to feeling, consecration to inspiration, devotion to the immediate: each of these is a *Stil*, the ultimate factor that determines not what an individual does, but how he does it.

But this *Stil* can be studied only through its physical accompaniment, the *Ausdruck*. The *Ausdruck* depends on the physical form of the body and the way its parts move in conjunction with each other. To interpret it aright, it is necessary not only to observe but to experience the feelings accompanying it in the way they are originally felt. Thereby the investigator is compelled to live a long time, as Clausz has done, among the people he studies.

Anlage is the way the body is suited to the *Stil*. By no means does it always correspond. Therefore the expression is not always unmixed. Such expression will have something incomplete, unsatisfying, peculiar.

Of all these there are all sorts of combinations possible; Clausz discusses some of them.

The question arises: How does Clausz know that these *Stile* really exist? He does not attempt an *a priori* catalogue of possibilities, but, studying many individuals, he has come to know several *Stile* intimately. These he describes. He does not say how many there are or might be.

If we ask: How does he know that these *Stile* are original, essential, pervailing throughout the race?; his answer is experience. He has lived with the people he describes, felt with them, found their expressions corresponding to one or another essential manner, or to a mixture of manners. This is the weakest place in his theory: How

does he know that what he considers pure *Stil* is pure and the other mixed? May the mixed *Stil* not be pure from another point of view or the pure *Stil* even be other?

But the book—none of his books—is concerned primarily with the theory. Clausz feels that he is evolving a method, not that he has already perfected it; and he gives us the benefit of his work as he goes along. Description and theory go hand in hand. We may hope that in the not too distant future he may feel sure enough of himself to give us in detail his principles and justifications as well as the individual steps of his method, that we, too, may learn to apply it and be delivered of the suspicion that perhaps the results can be attained only by a certain intuition.

This particular book, as well as *Rasse und Seele* and *Fremde Schönheit*, contains many illustrations, which will make the method seem more apt and the results more tangible than this dry review.

R. E. SALESKI

The Old Savage in the New Civilization. RAYMOND B. FOSDICK. (New York: Doubleday, Doran & Co., Inc., 1928.)

In a series of addresses delivered before college and university audiences, and now issued in book form, the author raises a number of pertinent questions. If these cannot be answered categorically, they at least challenge the serious attention of the thinking world.

> Humanity stands today in a position of unique peril. An unanswered question is written across the future. Is man to be the master of the civilization he has created, or is he to be its victim? Can he control the forces which he himself has let loose? Will this intricate machinery which he has built up and this vast body of knowledge which he has appropriated be the servant of the race, or will it be a Frankenstein monster that will slay its own maker?

In brief, what is going to happen to man unchanged in a changing world?

This is an age of standardization not only in material things but also in things intellectual and spiritual. How far is it possible to combine the uniformity and large-scale industrial operations with the diversity, originality, and spontaneity, which are the supreme contributions of the individual to society? The author comes to the conclusion that in the realm of ideas standardization means death. Variations from type are the biological steps by which the race advances; these society cannot afford to stamp out. It is through

variations from type, such for example as "a St. Francis, a Goethe, or a Darwin, that we have any civilization at all."

The very leisure which our machine civilization engenders may be a source of danger.

Leisure does not automatically produce culture. It may create an opportunity for culture, but it does not guarantee that the opportunity will be developed. And yet sheer idleness—browsing without any particular purpose from one lazy interest to another—may be the means by which we keep the lid from blowing off our high-power civilization.

Machine civilization has led to the unity of civilization.

Into this delicately adjusted mechanism of our modern life comes the savage. The transformation that has revolutionized his world has scarcely touched him.

The organic unity of civilization renders it more easily susceptible to injury, since the whole is as vulnerable as its exposed and weakest parts. What might happen should the old savage stalk into the picture "armed no longer with bows and arrows, but with TNT?"

Under these conditions, no nation can any longer live unto itself. In this new unity of the human race, there are no chosen people nor is there special salvation. There are no longer two worlds—one of Greeks, and another of Barbarians. Today "nations are roped like Alpine climbers crossing a glacier; they survive or perish together."

Science is fast creating not only useful machinery but also tools that may be turned into deadly weapons. Is there intelligence enough to convert destructive into constructive tendencies? "What use will the old savage make of his new civilization?"

For the reviewer to claim the necessary knowledge needed to answer questions which the author frankly leaves unanswered would be presumptuous. He can, however, and should, and in this case does, acknowledge the fact that the author's work has set him thinking and is well calculated to do as much for other readers.

GEORGE GRANT MACCURDY

The Folklore of the Teeth. LEO KANNER. (New York: The Macmillan Company, 1928. 316 pp., 17 figs.)

Most of the material in this book was published serially in *Dental Cosmos* two to three years ago. The author, a surgeon, makes a simple

presentation of considerable data concerning the teeth, with no bias toward theory, and with no attempt at interpretation; although he did make a rather unconvincing effort in that line about a year ago in *The Psychoanalytic Review*.

There is a useful place for a book of this sort, which is written primarily for the dentist and the layman who is interested in the oddities of folkways and in superstitious beliefs, especially as they occur in Europe and Asia. Chapters are devoted to such matters as the cutting of the first tooth, disposing of the first cast tooth, causes and cures for toothache, the use of plant and animal products as remedies, the filing, extraction, and staining of teeth, and the relief of toothache by charms and by intervention of holy persons. One chapter that might be of especial interest to anthropologists is the one devoted to to the primitive use of toothbrush and toothpick.

What seems to be an interesting antithesis in evaluation of data, develops in that Dr. Kanner is so little concerned with dreams about losing a tooth, that he devotes a single paragraph to the subject on the next to the last page, whereas, Dr. C. G. Seligmann in an address before the Anthropological Institute some four years ago, showed that he would make that very subject the opening chapter in any treatise he might write on the folklore of the teeth. The concept of "thunder-teeth" as found in Malaysia, in which Elliot Smith and W. J. Perry have shown some interest, receives no mention. Tooth evulsion in Australia, a problem that Frazer has endeavored to solve, is dismissed with a few paragraphs. And again, the use of teeth as money, as adzes, and the subject of the haggletoothed gods of Mexico receive scant mention, if any at all.

This is because very few data have been derived from anthropological books and papers, almost none from American works; nor have folklore journals been consulted exhaustively. More German works are referred to than English, and many of the former would have been overlooked, probably, had anyone but a physician and surgeon compiled the material. A bibliography is included, but specific book titles and page numbers are rarely given in the text, so that one can hardly employ the work in a reference capacity. Dr. Kanner says that he only looks upon his production as a skeleton for a more comprehensive study in which he hopes many will engage.

H. S. DARLINGTON

Dränkta länder och kulturer. [Drowned lands and cultures.] WILHELM RAMSAY. (Soc. Sci. Fennica, Årsbok lv, 1925, No. 2, 15 pp., 8 figs. Helsingfors, 1926.)

This paper deals with two important consequences of the eustatic changes of sea level connected with the waxing and waning of the Pleistocene ice sheets. During the glaciations, when the ocean level was low, there occurred more or less extensive land areas outside the modern coasts. And since, during the glaciations more than at other ages, the coastal areas may have offered the most favorable living conditions of man, they are eventually the original homes of cultures appearing during subsequent interglacial and postglacial epochs. As example is given the Persian gulf and the Sumerian culture.

During the interglacial and postglacial epochs sea level rose, submerging the edges of the continents to amounts corresponding to the reduction of the ice sheets and glaciers. The shore lines formed at the limits of the transgressions are contemporaneous on all coasts; and the relation of the prehistoric living sites to these shore lines offers perhaps the best means of correlation between archaeological epochs in different parts of the world. As example is taken the postglacial eustatic transgression and the cultures in northern Europe.

ERNST ANTEVS

SOME NEW PUBLICATIONS

Allier, Raoul. The Mind of the Savage. (London: Bell, 1928. 15s. New York: Harcourt)

Barton, George A. The Historical Results of Recent Exploration in Palestine and Iraq. (Amer. Historical Review, 33: 759–783, 1928.)

Baudin, Louis. L'Empire socialiste des Inka. (Travaux et Mémoires de L'Institut d'Ethnologie [Univ. Paris], 5: 1–283, 1928.)

Begouen (Comte) et Begouen, Louis. Découvertes nouvelles dans la caverne des Trois-Frères (Ariège). (Revue anthropologique, 38: 358–364, 1928.)

Bégouen (Comte). Deux Bambous pyrogravés. Modèles pour tatouage des Iles Marquises, conservés au Musée d'Histoire Naturelle de Toulouse (Collection Roquemaurel) et au Musée de Brive. (Bulletin de la Société d'Histoire Naturelle de Toulouse, Tome 57, 1928.)

Bey, Noureddin, Bey, Nechet Omer, Dr. Mouchet, Bey, Sureya. Craniologie des Turcs. (Revue anthropologique, 38: 321–323, 1928.)

Bleek, D. F. Comparative Vocabularies of Bushman Languages. (Cambridge Press. 6s.)

Blom, Frans. La Importancia de las Investigaciones Arqueológicas en la América Latina. (Nueva Patria, 1: 7–8, 1929.)

Boas, F. Anthropology and Modern Life. (New Jersey: New York W. W. Norton & Co. 1928. $3.00.)

Breuil, Abbé Henri *and* Burkitt, M. C. Rock Paintings of Southern Andalusia. A Description of a Neolithic and Copper Age Art Group. (Oxford Press, 1928. 63s.)

Bryk, Felix. Neger-Eros; Ethnologische Studien über das Sexualleben bei Negern. (Berlin: A. Marcus & E. Weber, 1928. 146 pp., 85 ills.)

Bushnell, David I., Jr. Friedrich Kurz, Artist-Explorer. (Smith. Rept. for 1927, Publ. 2950: 507–527, 1928.)

Butler, C. S. Primitive Syphilis. (United States Naval Medical Bulletin, v. 26, no. 3, 1928.)

Caso, Alfonso. Las Estelas Zapotecas. (Publ. de la Secretaria de Educacion Publica, 1928. Mexico.)

Carthaus, Emil. Auf der Suche nach dem Pithekanthropus, dem "Affenmenschen" von Java. (Reclam Philipp jun. Leipzig, n.d., pp. 72; gehefted 40 Pf.; gebunden 80 Pf.)

Chi-Chao, Liang. Archeology in China. (Smith. Rept. for 1927, Publ. 2947: 453–466, 1928.)

Collins, W. H. The National Museum of Canada. (Canada: Dept. of Mines, Bull. 50: 32–70, 1928.)

Crane, Leo. Desert Drums: The Pueblo Indians of New Mexico, 1540–1928. (New Jersey: Explorers' Book Service, 1928. 50 ills. $5.00.)

Davidson, D. S. Decorative Art of the Têtes de Boule of Quebec. (Indian Notes and Monographs, 10: 85–113, 1928.)

Davidson, D. S. Family Hunting Territories in Northwestern North America. (Indian Notes and Monographs, no. 46: 1–34, 1928.)

Davidson, D. S. Family Hunting Territories of the Tribes of Tierra del Fuego. (Indian Notes, 5: 395–410, 1928.)

Dawson, Christopher. The Age of the Gods. (Boston: Houghton Mifflin Co., 1928. 446 pp. $5.00.)

Deserontyon, John. A Mohawk Form of Ritual of Condolence. (Translated, with an Introduction by J. N. B. Hewitt.) (Indian Notes and Monographs, 10: 61–84, 1928.)

Dickey, Lyle A. String Figures from Hawaii. (Bernice P. Bishop Mus., Bull. 54: 1–170, 1928.)

Durlach, Theresa M. The Relationship Systems of the Tlingit, Haida, and Tsimshian. (Publ. Am. Ethn. Soc. of New York, 11: 1–177, 1928.)

Ellis, T. P. Welsh Tribal Law and Custom in the Middle Ages. (2 vols., Oxford: Clarendon Press, 1926, pp. xiv, 456, 460. £4.)

Emory, Kenneth P. Archaeology of Nihoa and Necker Islands. (Bernice P. Bishop Mus., Bull. 53: 1–123, 1928.)

Firth, Raymond. Wealth and Work of the Maori. (London: Kegan Paul, Publishers, 1928. 25s.)

Gann, Thomas. More Maya Discoveries. (London: Duckworth, Publishers, 1928. 21s.)

Gann, Thomas. Discoveries and Adventures in Central America. (London: Duckworth, 1928. 21s.)

Gilmore, Melvin R. The Making of a New Head Chief by the Arikara. (Indian Notes, 5: 411–418, 1928.)

Gilmore, Melvin R. Arikara Account of the Origin of Tobacco and Catching of Eagles. (Indian Notes, 6: 26–32, 1929.)

Gilmore, Melvin R. The Dakota Ceremony of Hunká. (Indian Notes, 6: 75–78, 1929.)

Greeley, A. W. The Polar Regions in the 20th Century. (New Jersey: Explorers' Book Service, 1928. $4.00.)

Gsell, Stéphane. Histoire Ancienne de l'Afrique du Nord. Tome V. Les Royaumes Indigènes: Organisation Sociale, Politique, et Économique. Tome VI. Les Royaumes Indigènes: Vie Materielle, Intellectuelle, et Morale. (Paris: Hachette, 1927. Pp. 297, 302, 45 fr. each.)

Guha, B. S. Some Anthropological Problems in India. (Man in India, 8: 146–167, 1928.)

Haeberlin, H. K., Teit, James A., *and* Roberts, Helen H. Coiled Basketry in British Columbia and Surrounding Region. (B.A.E., Ann. Rept. 41: 119–484 [1919–1924], 1928.)

Hafen, LeRoy. The Overland Mail 1849–1846. (Cleveland: Arthur H. Clark Co., 1928. $6.00.)

Harrington, M. R. Old Sauk and Fox Beaded Garters. (Indian Notes and Monographs, 10: 37–44, 1928.)

Harrington, M. R. A Sacred Warclub of the Oto. (Indian Notes and Monographs, 10: 23–30, 1928.)

Harrington, M. R. A Bird-quill Belt of the Sauk and Fox. (Indian Notes and Monographs, 10: 45–52, 1928.)

Hebard, Grace Raymond *and* Brininstool, E. A. The Bozeman Trail. (Cleveland: Arthur H. Clark Co., 1928. $12.50.)

Holmes, S. J. The Resistant Ectoderm of the Negro. (Am. Jour. Phys. Anthr., 12: 139–153, 1928.)

Holmes, S. J. Will the Negro Survive in the North? (The Scientific Monthly, 27: 557–561, 1928.)

Holmes, S. J. Age at Parenthood, Order of Birth, and Parental Longevity in Relation to the Longevity of Offspring. (Univ. Calif. Publ. Zool., 31: 359–375, 1928.)

Hrdlicka, Ales. The Origin and Antiquity of the American Indian. (Smith. Rept. for 1923 [revised edition], publ. 2778: 481–494, 1928.)

Hrdlicka, Ales. The Evidence Bearing on Man's Evolution. (Smith. Rept. for 1927, Publ. 2945: 417–432, 1928.)

Imbelloni, J. Einige konkrete Beweise für die außerkontinentalen Beziehungen der Indianer Amerikas. (Mitteilungen der Anthropologischen Gesellschaft in Wien, 58: 301–331, 1928.)

Jenness, D. Archaeological Investigations in Bering Strait. (Canada: Dept. of Mines, Bull. 50: 71–80, 1928.)

Kendrick, T. D. The Archaeology of the Channel Islands. (Methuen, Publishers, 1928. 25s.)

Kirk, Edwin. Bathmopterus, a New Fossil Gasteropod Genus from the Silurian of Alaska. (Proc. U. S. National Mus., 74: 1–4, 1928.)

Krieger, Herbert. Indian Villages of Southeast Alaska. (Smith. Rept. for 1927, Publ. 2948: 467–494, 1928.)

Laufer, Berthold. The Prehistory of Aviation. (Field Mus. Nat. Hist., Publ. 253: 1–96, 1928.)

Leblanc, Dr. Les Touareg, ethnographie physique et anthropométrie (mission du Hoggar, 1928). (Revue anthropologique, 38: 331–357, 1928.)

Lehmann-Nitsche, R. Coricancha. (Revista del Museo de La Plata, 31: 1–260, 1928.)

Leigh, R. W. Dental Pathology of Aboriginal California. (Univ. Calif. Publ. Am. Arch. Ethn., 23: 399–440, 1928.)

Lévy-Bruhl, Lucien. The "Soul" of the Primitive. (Allen and Unwin, 1928. 12s 6d.)

Lothrop, S. K. Santiago Atitlan, Guatemala. (Indian Notes, 5: 370–394, 1928.)

Lothrop, S. K. Further Notes on Indian Ceremonies in Guatemala. (Indian Notes, 6: 1–25, 1929.)

Lotsy, J. P. *and* Goddijn, W. A. Voyages of Exploration to Judge of the Bearing of Hybridization upon Evolution. I. South Africa. (The Hague: Martinus Nijhoff, Publisher, 1928. 35 guilders.)

Lynd, Robert S. *and* Helen Merrell. Middletown. A Study in Contemporary American Culture (foreword by Clark Wissler). (New York; Harcourt, Brace and Co., 1928. $5.00.)

Macalister, R. A. S. The Archaeology of Ireland. (London: Methuen.)

Mahalanobis, P. C. A Statistical Study of the Chinese Head. (Man in India, 8: 107–122, 1928.)

Martin, Paul S. The 1928 Archaeological Expedition of the State Historical Society of Colorado. (The Colorado Magazine, 6: 1–35, 1929.)

Mason, Gregory. Pottery and Other Artifacts from Caves in British Honduras and Guatemala. (Indian Notes and Monographs, no. 47: 1–45, 1928.)

Maspero, Henri. The Origins of the Chinese Civilization. (Smith. Rept. for 1927, Publ. 2946: 433–452, 1928.)

Mathiassen, Therkel. Material Culture of the Iglulik Eskimos. (Rept. Fifth Thule Expedition 1921–1924 [Gyldendalske Boghandel], 6: 1–242, 1928.)

Mathiassen, Therkel. Some Specimens from the Bering Sea Culture. (Indian Notes, 6: 33–55, 1929.)

McKern, W. C. The Neale and McClaughry Mound Groups. (Bull. Public Mus. City of Milwaukee, 3: 213–416, 1928.)

Mehta, S. S. Laws of Eugenics and the Institution of Marriage amongst Hindus. (Man in India, 8: 168–177, 1928.)

Miles, W. R. Human Body-Weight: I. Correlations Between Body Widths and Other Physical Measurements on Young Men. (Science, n.s., 68: 382–386, 1928.)

Miller, Gerrit S. Some Elements of Sexual Behavior in Primates and their possible Influence on the Beginnings of Human Social Development. (Jour. of Mammalogy, 9: 273–293, 1928.)

de Morgan, Jacques. La Préhistoire Orientale. (3 vols., Paris: Geuthner, 1925–27, pp. xxxv, 334; vi, 426; vi, 436. 300 fr.)

Morris, Earl H. Notes on Excavations in the Aztec Ruin. (Anthr. Pap., Am. Mus. Nat. Hist., 26: 267–421, 1928.)

Myer, William Edward. Two Prehistoric Villages in Middle Tennessee. (B.A.E., Ann. Rept., 41: 485–614 [1919–1924], 1928.)

Nielsen, Ditlef (editor). Handbuch der Altarabischen Altertumskunde. Band I. Die Altarabische Kultur. (Copenhagen: Arnold Busck, 1927, pp. viii, 272.)

Oetteking, Bruno. Primitive Traits in the American Aboriginal Population. (Institut International d'Anthropologie, III Session Amsterdam [Paris: E. Nourry], 1928.)

Oetteking, Bruno. Morphological and Metrical Variation in Skulls from San Miguel Island, California. II. The Foramen Magnum: Shape, Size, Correlations. (Indian Notes and Monographs, no. 45: 1–54, 1928.)

Parvan, Vasile. Dacia: Recherches et Découvertes Archéologiques en Roumanie. Publiée sous la direction de Vasile Parvan. Tome I, 1924; tome II, 1925. (Bucharest: Cultura Nationala, 1927, pp. viii, 368; viii, 429.)

Peake, Harold. The Origins of Agriculture. (London: Ernest Benn, Ltd., Sixpenny Library.)

Pepper, George H. A Wooden Image from Kentucky. (Indian Notes and Monographs, 10: 53–60, 1928.)

Pepper, George H. A Stone Effigy Pipe from Kentucky. (Indian Notes and Monographs, 10: 3–22, 1928.)

Phillips, Paul C. (edited by). Forty Years on the Frontier as seen in the Journals and Reminiscences of Granville Stuart. (Cleveland: Arthur H. Clark Co., 1928. $12.50.)

Poisson, G. Les civilisations néolithiques et énéolithiques de la France. (Revue anthropologique, 38: 368–388, 1928.)

Puxley, W. L. The Magic Land of the Maya. (New Jersey: Explorers' Book Service, 1928. Ills. $4.00.)

Ramadas, G. Marriage Customs in South India. (Man in India, 8: 136–145, 1928.)

Renaud, E. B. Evolution of Population and Dwelling in the Indian Southwest. (Social Forces, 7: 263–270, 1928.)

Ritchie, William A. An Algonkian Village Site near Levanna, New York. (Research Records [Rochester Municipal Mus.], 1: 1–27, 1928.)

Rivet, P. Relations commerciales précolombiennes entre l'Océanie et l'Amérique. ("Anthropos" Administration: St. Gabriel-Mödling, 1928.)

Roy, Sarat Chandra. Oraon Religion and Customs. (Shambazar, Calcutta: K. M. Banerjee, 1928. Twelve Rupees.)

Saville, Marshall H. Astronomical Observations in Ancient Mexico. (Indian Notes, 6: 79–80, 1929.)

Saville, Marshall H. Shell Carvings from Colombia. (Indian Notes, 5: 357–363, 1928.)

Saville, Marshall H. Bibliographic Notes on the Shrinking of Human Heads in South America. (Indian Notes, 6: 56–74, 1929.)

Schebesta, Paul. Among the Forest Dwarfs of Malay. (Hutchinson, Publishers, 1928. 18s.)

Schwarz, E. H. L. The Kalahari and its Native Races. (Witherby, Publishers, 1928. 16s.)

Semple, Ellen Churchill. Ancient Mediterranean Agriculture. (Baltimore: Agricultural History, 2: 61–98, 129–156, 1928.)

Shtezner, V. A Journey to the Northeast of Mergen. (Review of the Manchuria Research Society, pp. 23–26, 1928.)

Skinner, Alanson. An Illinois Quilled Necklace. (Indian Notes and Monographs, 10: 31–36, 1928.)

Smith, H. I. Restoration of Totem Poles in British Columbia. (Canada: Dept. of Mines, Bull. 50: 81–84, 1928.)

Spinazzola, V. Le Arti Decorative in Pompei Nel Museo Nazionale di Napoli. (Plauen: C. F. Schulz & Co., 1928. 300 pls. $13.00.)

Stolpe, Hjalmar. Collected Essays in Ornamental Art. (Stockholm: Aftonbladets Tryckeri, 1927.)

Stolpe, Hjalmar. Collected Essays in Ornamental Art. Atlas. (Stockholm: Aftonbladets Tryckeri, 1927.)

Swanton, John R. The Interpretation of Aboriginal Mounds by Means of Creek Indian Customs. (Smith. Rept. for 1927, Publ. 2949: 495–506, 1928.)

Tessmann, Günter. Menschen ohne Gott; ein Besuch bei den Indianern des Ucayali. (Stuttgart: Strecker und Schröder, 1928. 224 pp., 14 M., cloth 18 M.)

Thomas, W. I. *and* Dorothy S. The Child in America. (New York: Alfred A. Knopf, 1928.)

Vestal, Stanley. Kit Carson, the Happy Warrior of the Old West. (New York: Houghton Mifflin Co., 1928. $3.50.)

Weller, Stuart. Paleontology and Human Relations. (Smith. Rept. for 1927, Publ. 2940: 309–319, 1928.)

Wildschut, William. Blackfoot Pipe Bundles. (Indian Notes, 5: 419–433, 1928.)

Wintemberg, W. J. Uren Prehistoric Village Site, Oxford County, Ontario. (National Museum of Canada, Bull. 51: 1–97, 1928.)

Work, Monroe N. A Bibliography of the Negro in Africa and America. (New York: H. W. Wilson Co., 1928(?) [17,000 references.] $12.00.)

Wright, A. R. English Folklore. (London: Ernest Benn, Ltd., 1928; Sixpenny Library No. 33.)

NEW ISSUES OF ANTHROPOLOGICAL JOURNALS

ANTHROPOS, 23: 749–1114, Heft, 5, 6, 1928.

Lehmann, Walter. Ergebnisse einer mit Unterstützung der Notgemeinschaft der Deutschen Wissenschaft in den Jahren 1925–1926 ausgeführten Forschungsreise nach Mexiko und Guatemala.—*Césard, R. P.* Proverbes et contes Haya.—*Lebzelter, Viktor.* Zur Geschichte der Bergdama.—*Nimuendajú, Kurt.* Wortliste der Sipaiya-Sprache.—*Champagne, P. Emery.* La religion des noirs du Nord de la Gold Coast.—*Walk, Leopold.* Initiationszeremonien und Pubertätsriten der südafrikanischen Stämme.—*Sandschijew, Garma.* Weltanschauung und Schamanismus der Alaren-Burjaten.—*Bosch, G. van den.* Quelques notes sur le nom et la notion de l'Etre Supreme et d'un dieu-vengeur chez les Balendu.—*Tauern, Odo D.* Beitrag zur Kenntnis der Sprachen und Dialekte von Seran.—*Rohlfs, G.* La Grecia italica.—*Vanoverbergh, Morice.* Notes on Iloko.

ANTIQUITY, 2: 385–527, December, 1928.

Vouga, Paul. The Oldest Swiss Lake-dwellings.—*Crawford, O. G. S.* Stone Cists.—*Navarro, J. U. de.* Massilia and Early Celtic Culture.—*Rice, D. Talbot.* The Monasteries of Mount Athos.—*Peake, Harold.* The Copper Mountain of Magau.—*Salter, H.* The Ford of Oxford.

ANTIQUITY, 3: 129–256, 1929.

Fox, Cyril. Dykes.—*Burkitt, M. C.* Rock Carvings in the Italian Alps.—*Raistrick, A.* and *Chapman, S. E.* The Lynchet Groups of Upper Wharfedale, Yorkshire.—*Wheeler, R. E. M.* Caistor, and a Comment.—*Hemp, W. J.* Three Hill Forts in Eastern Spain.—*Hawkes, Christopher.* The Roman Siege of Masada.

ANTIQUITY, 3: 257–368, 1929.

Collingwood, R. G. Town and Country in Roman Britain.—*Crawford. O. G. S.* The Giant of Cerne and other Hill-figures.—*Liddell, Dorothy M.* New Light on an Old Problem.—*Collingwood, W. G.* Arthur's Battles.—*Roe, Frank G.* The 'Wild Animal Path' Origin of Ancient Roads.—*Virolleaud, Ch.* The Syrian Town of Katna and the Kingdom of Mitanni.—*Heurtley, W. A.* Prehistoric Macedonia.—*Hutton, J. H.* Assam Megaliths.

DISCUSSION AND CORRESPONDENCE

The Flexibility of Methodology

Happily there are few authors who are able conscientiously to defend their writings in every detail after a lapse of four years. Such a defense would imply a want of progressive thought. Every author feels that his work could be improved if he were allowed a second edition. It is therefore in no spirit of complacent satisfaction that I defend the *History of Tattooing and its Significance*. The book was originally published in England, 1925, but the American edition did not appear until two years later. There has been time therefore to receive a large number of reviews, all of which, with one exception, have indicated that my critics have taken the trouble to read the introduction in order to ascertain the nature and purpose of the book. The title also suggests the fact that the social and psychological significance of body marking is the main theme.

Miss Mead's disparaging remarks (American Anthropologist, n.s., 31: 176, 1929) require a comment for two reasons. The more important of these is my critic's tacit assumption that there is one method of approach which is for every purpose superior to all others. I refer to the method which insists on consideration of a factor only in relation to every detail of its cultural setting. Such a method assumes the inadmissibility of comparing facts relating to the pubertal tattooing of Kabyle, Ainu, and Melanesian women. Generally speaking, the investigator who follows a strictly ethnological method is supposed to work in definitely restricted ethnological areas in which the inhabitants are racially and culturally comparable.

I admit that in taking a broad view along the lines of sociology and psychology I have been "hospitable to evidence from every area." The tattooing of girls of marriageable age is a social fact which in my opinion may be profitably and logically studied in southeastern New Guinea, Greenland, Yezo, and Paraguay. The fact that I have made comparisons of the pubertal tattooing in widely separated areas does not "show a scanty knowledge of the cultural patterns." With these I am no doubt as well acquainted as is my critic. Furthermore, due regard was paid to the cultural setting insofar as it had a bearing on the points in question. Cultural elements, locations,

periods, may differ, but there is a basic fact of tattooing whose social and psychological significance may be studied wherever it occurs. The broader the field, the better the general impression of the function of the factor.

Again, in my survey I have compared tattooing as an honorific mark used by Eskimo who take whales, a Koita man who takes a head, and an Omaha Indian who registers his war honors by tattooing his daughter. If the technique of tattooing varies in such a way that one adolescent girl is tattooed with an instrument of shark's teeth, another with bamboo splinters, and a third with a small adze, I do not feel that my psychological and sociological analysis is vitiated. If the body-marking process is significant in its implication of a definite social status by arrival at puberty or prowess in war, the assembling of illustrations from diverse cultural settings adds to, rather than detracts from, the philosophical interest. To say that because examples are chosen from points which are geographically and ethnologically remote, "The whole argument can be dismissed as worthless," is as arrogant as it is unscientific.

Fortunately there is no need to protest at length against the charge of a rambling discussion. The chapters and sub-headings are plainly printed and the subject matter is appropriately arranged under these headings. But, in spite of a systematizing of data, there is, as every writer knows, a difficulty in classifying certain borderline instances.

With regard to historical data, is Miss Mead able to furnish a date more remote than that certified for the skin of an Egyptian mummy? I refer to the exhibit photographed in the Royal College of Surgeons.[1] My detractor cannot claim that I have tried to hinge an argument on this instance which is mentioned in the chapter dealing with historical data. On the contrary I have made a critical examination of Professor Elliot Smith's theory. I have stated that against the theory of Egyptian origin there are important points which should be carefully weighed.[2]

Touching upon the exclusion of references which Miss Mead felt the need of incorporating, I plead, not ignorance of their existence, but the fact that they do not add a new *raison d'être* for the tattooing process. I should welcome evidence which proved some

[1] History of Tattooing, 320.

[2] Ibid., 334.

entirely new social and psychological reason for tattooing. Perhaps it is pertinent to add that the book is published, not through the courtesy of a learned society but as a publisher's risk. Fortunately the publisher's optimism has been justified, but a limitation was placed upon foot notes, bibliography, and pictures. I should have liked treble the number of illustrations in order to give further cogence to my remarks on the "naturalistic" and "geometrical" schools,—terms which seem to be somewhat derisively quoted by my critic.

I am well aware that I might now, after acquiring a fair general grasp of the subject as a background, attack the problem along ecological lines. My methods of dealing with the *History and Significance of Tattooing, Tribal Dancing and Social Development, or Origins of Education*, do not imply that I favour the sociological method as an instrument suitable for the investigation of every problem. In dealing with body-marking, dancing, and types of education through initiation ceremonies, an inquirer is probably dealing with three of the oldest and most important factors of human development, all of which are widely distributed among culture patterns of varied types. I feel convinced that in dealing with such basic factors there is scientific value in beginning with a generous philosophical, social, and psychological background. The supplementing of this line of thought by regional surveys is a separate thesis calling for a distinct technique. Before attempting to hack one's way through difficult and wooded country there is an advantage in surveying the contours from an adjacent hill.

When questioning the cohesion of research in ethnology, it is logical to ask whether there is any coördinating principle running through the inquiry. Let us suppose the classification of West Australian boomerangs, spear-throwers, churingas, and spears, into local groups. There then follows some speculation with regard to the reasons for this preservation of easily recognized local patterns. Social, psychological, and geographical facts may be adduced to explain the distribution. Thus far the study is one of ecology, for it is mainly concerned with the relation of an organism to environment. A natural extension of the inquiry would embrace other Australian group types. But, if the investigation turns to a comparison of Australian spear-throwers and boomerangs with similar types of weapons from remote areas, the character of the problem may have changed in principle. Instead of a coördinating social, geographical,or psychological factor the vindication for research may be a compara-

tive study of the mechanics and mathematics of the flight of missile weapons. Cultural setting is not indispensable.

The study of snake cults in Africa may begin with a careful regional survey. Soon the student will have recourse to Arabian and Iranian ethnology to help in explaining certain beliefs which prevail in the areas of Africa which have been subject to Semitic and Hamitic culture. A wider vision shows that far from the regions mentioned there are beliefs in rainbow snakes, fire-spitting serpents, and the snake as an emblem of fertility. All beliefs connected with serpents have, I think, a definite origin in the facts of herpetology. In other words, the research began with an ethnological method but ended with zoology as the unifying principle. Methodology logically depends on the antiquity and generality of a factor in relation to the viewpoint desired,

In conclusion it is only fair to Miss Mead to say, that after a vigorous two-page attack on my methodology, the task of knocking down the straw man of her own creation has proved wearisome. The review of my book concludes by saying that,

> The main service of the book rests upon the assemblage of a large body of illustrative material about the number of diverse social and religious concepts which may become associated with such an old and widely distributed practice as tattooing and its relatives, body painting and scarification.

In view of this admission, and taking into consideration the title, the introduction, and the general arrangement of my book, it is curious that so much critical acumen should have been devoted to an exposé of my supposed ignorance of certain facts and methods. These I did not employ for the adequate reason that they were not germane to my purpose.

WILFRID D. HAMBLY

THE INFLUENCE OF ANTHROPOLOGY ON SOCIOLOGY

There has been much talk and much writing in recent years about the influence of anthropology on sociology. Anthropologists have hoped, and with some right, that sociologists would help them put the results of their science, small as they yet are, into the stream of current thought. Certain sociologists, aligning themselves with the social anthropologists, have also looked forward to such a cooperation.

Anthropology may have become more popular in the last decade in the academic as well as in the lay world, but a recent survey[1] shows

[1] Hornell Hart, The History of Social Thought. Social Forces, 6: 190–196, 1927.

that so far as sociological textbooks and teaching is concerned anthropologists play a very insignificant rôle as yet. This survey, done in the socio-statistical manner by Professor Hornell Hart of Bryn Mawr, may come as a surprise to all of the fraternity, but it must come as a shock to the members of "The American School."

Before giving the results, let me tell first what Professor Hart and a group of his students did. Dr. Hart wanted to secure an American consensus on the relative importance of various contributions to the development of sociology. He says he is concerned with "social thought,"[2] but his exclusive interest is sociology, with the special aim of finding out what writers, prospective Ph.D.'s, should study for their examinations.

With this as his aim, he took the following as the bases for the statistics he got up: (1) the men discussed in the sociology courses at Wellesley and at the universities of London, Columbia, and Missouri; (2) those discussed in the different histories of sociology by Bogardus, Lichtenberger, and Small; and in Bliss's "New Encyclopedia of Social Reform"; (3) the writers referred to in the indices of Small's "General Sociology," Giddings' "Studies in the Theory of Human Society," Bushee's "Principles of Sociology," and Dealey's "Sociology," and in the books of sociology readings by Carver, Case, and Park and Burgess; (4) the works listed in the bibliographies on sociology in the *Encyclopedia Britannica* and the *New International Encyclopedia*.

Two points were given to a man listed in any course and one point for being in the encyclopedia bibliographies. For the other main sources names were put into two groups: those given major emphasis received two points, while those given minor emphasis received one point. Under this scheme the maximum possible score was thirty.

Forgetting the basis and method of the investigation, which were not conducive to a high score for anthropologists, how did anthropology fare at the hands of these sociologists? As the following list shows, no anthropologist is ranked very high:

Boas 4	Rivers 3
Frazier (sic) 4	Kroeber 2
Goldenweiser 3	Wissler 2
Lowie 3	E. B. Taylor (sic) 2

It may be said, of course, that these scores should not be taken too seriously, but it cannot be denied that they indicate that a knowledge of anthropology and anthropologists is considered of little importance

to future sociologists.[2] It may be added here that of 259 sociologists who returned the questionnaire sent out in 1926 by the American Council of Learned Societies inquiring about major fields of interest, only four gave anthropology.[4]

To give some idea of the relative value placed by sociologists upon different approaches and contributions to sociology I have selected a few names from the long list of writers scoring two points or more. The environmentalists get many places and high scores:

Buckle 13	Ratzel 5
Montesquieu 13	Ellsworth Huntington 4
Ellen Semple 7	

Other examples I choose almost at random:

Condorcet 7	Lasalle 6
Carrol D. Wright 4	John Fiske 5
Schmoller 5	Dante 4
John Ruskin 4	James Bryce 4
William Morris 5	G. Novicow 4
	Louis Blanc 3

Is it a result of the scoring system alone that gives these writers a higher rating than the anthropologists? It must be remembered that most of the books taken as a basis for scoring were written by men of the old school. Indeed, the list as a whole shows the great influence of tradition upon a study which prides itself, perhaps too much, on being progressive. This authority of tradition can be seen in the list of writers who are considered to be important, that is, men with fifteen points or more, or fifty percent of the maximum possible score:

Aristotle 17	Ross 19
Comte 25	Adam Smith 15
Darwin 16	Herbert Spencer 27
Giddings 18	Tarde 16
Malthus 15	Lester Ward 24
Plato 15	

---

[2] He would not confine his attention to writers alone if he were really interested in "social thought," whatever that may mean.

[3] It may be pertinent to point out that Francis Bacon received only two points and that the social teachings of Jesus received only a score of seven, or twenty-three percent of the maximum possible score.

[4] Hugh Carter, Research Interests of American Sociologists. Social Forces, 6: 211, 1927.

John Stuart Mills, Rousseau, and Sumner each reached fourteen points.

Sociologists have pointed out[5] that "one of the notable trends in American sociology during the past decade has obviously been an increased interest in the field of anthropology." So many people believe this that we must conclude that Dr. Hart's report understates the influence of anthropology on sociology. But evidently that influence has not yet reached textbooks.

MAURICE GREER SMITH

UNIVERSITY OF COLORADO.
BOULDER, COLORADO.

[5] Carter op. cit., 211

ANTHROPOLOGICAL NOTES AND NEWS

The Social Science Research Council Fellowships

At its recent meeting the Fellowship Committee of the Social Science Research Council awarded 27 research Fellowships. The awards were distributed among the Social Scientists as follows: Anthropology three; Economics five; History six; Political Science three; Psychology three; Sociology three; Geography one; Law two; Miscellaneous one.

The three Fellows selected from the applicants in Anthropology are:

Gower, Charlotte Day (Ph.D. Chicago)
Social Science Research Council Fellow 1928–29.
Project: "An Ethnological and Sociological Study of a Typical Sicilian Village Community as a Contribution to the Background of the Problem of the Sicilian Immigrant to the United States."
Study half in Sicily and half in Chicago.

Lattimore, Owen
Project: "Preparatory Academic Work,—Leading up to Direct Work in Manchuria, Political and Economic."
Study at Harvard University, Paris and Manchuria.

Lesser, Alexander(Ph.D. June 1929,Columbia)
Project: "An Inquiry into the Possibility of Law in Social Phenomena, with special reference to the social oganization of primitive peoples."
Study in New York City and Southwestern United States.

These Fellowships are designed to promote the development of research workers rather than to aid in the execution of specific research projects. It is hoped they may save to the field of productive scholarship promising Ph.D's whose zeal for research and writing has been gradually ebbing under heavy and diversified teaching schedules and routine administrative responsibilities. Or again, by affording a year of travel and investigation, the fellowships may broaden and enrich the scholarship of the young men and women who have just completed their Ph.D. work. Such a year may enable a Fellow to push further his researches in the field which his Ph.D. thesis has opened up. It may simply result in his digging deeper within the narrow confines of his own discipline. This in itself is worth while. It may, however,—and the Committee hopes that this will frequently prove to the case—enable him to broaden his approach

to the problem of his special interest. He may elect to use the year to study such phases of other social disciplines as will enable him better to understand the ramifications of his own problem. In this way he will become not only a more effective economist or historian, for example, but also a more effective social scientist.

Awards are made once a year. Applicants should apply to John V. Van Sickel, Fellowship Secretary, 50 East 42nd Street, New York City, N. Y. (after April 1st, 230 Park Avenue) in time to get their formal applications in by December 1st, for the awards beginning July 1st, following. The Committee meets in January or early February and the awards are made known around the middle of February.

The fellowships are open to men and women, citizens of the United States or Canada, who hold the Ph.D. degree or its equivalent and who are not over thirty-five years of age. These requirements are not absolutely iron bound but exceptions are more and more infrequent. The general term of the fellowship is one year, though in exceptional cases they may range from three months to two years. The stipend varies with the requirements of the fellow, such as his present salary, number of dependents, amount of travel involved, etc.

Descendants of Stone Age Man

Direct descendants of men of the Old Stone Age, eagerly sought for all over the world by anthropologists, are to be found in a small and dwindling race of South African natives, the Korannas, according to a report made by Dr. Robert Broom, of Victoria College, Stellenbosch, S. A., in *Nature*.

The skull measurements of the present-day Korannas agree closely with those of a prehistoric skull recently found about 80 miles north of Pretoria, associated with the bones of an extinct species of buffalo, which had apparently killed the hunter and then died of its own wounds. The human skeleton was badly broken, the skull especially being crushed into small fragments. The latter, however, have been skillfully pieced together, permitting a scientific determination of the type of man it once belonged to.

The skull, which Dr. Broom has christened the "Bushveldt skull," is of modern type, with little or no suggestions of the Neanderthal about it. It is not of the well-known European Cro-Magnon type, although Bushveldt man was contemporary with early Cro-Magnon

man in Europe, as shown by the type of implements he used, and by the bones of the extinct buffalo. Its comparatively modern pattern is suggested, among other things, by its small teeth, its well-developed chin, and the relative thinness of its bony walls.

The character that marks Bushveldt man as a primitive type, and at the same time ties him up with the present Koranna tribe, is the relatively low temporal, or side region of the head. In all advanced races this part of the cranium is quite definitely high.

Although the Bushveldt skeleton was the first find of actual human remains to be made in the region, Dr. Broom is of the opinion that the valley of the Vaal River was once the home of tens if not hundreds of thousands of men and women of this race. He bases this conclusion on the enormous numbers of the stone implements of their workmanship which have been discovered.

The New Policies of the Indian Bureau

The policy of the Indian Bureau under the new administration has been considered by the Board of Indian Commissioners, created by Congress to advise it on Indian problems, and has been given general approval as announced by Secretary Wilbur. It is as follows:

The fundamental aim of the Bureau of Indian Affairs shall be to make of the Indian a self-sustaining, self-respecting American citizen just as rapidly as this can be brought about. The Indian shall no longer be viewed as a ward of the nation but shall be considered a potential citizen.

As rapidly as possible he is to have the full responsibility for himself. Leadership should be given the Indians rather than custodianship.

The Indian stock is of excellent quality. It can readily merge with that of the nation.

In order to bring this about it will be necessary to revise our educational program into one of a practical and vocationa' character and to mature plans for the absorption of the Indian into the industrial and agricultural life of the nation.

Decentralization of the activities of the bureau shall be brought about as rapidly as possible.

Viewed over a term of years, the Indian agent, as such, with his abnormal powers, shall be dispensed with.

In so far as it is feasible, the problems of health and of education for the Indians shall become a responsibility of the various states.

Certain assistance for these purposes should be provided the states wherever it is equitable and desirable to do so.

New Indian schools should only be provided if it is not possible to merge the training of the Indian into the school system of the states. In so far as it is possible, scholarships in the institutions of higher learning of the country shall be provided for those Indian boys and girls who are capable of going beyond the ordinary high-school training.

The educational program for the Indians should be placed under the supervision of the Bureau of Education.

The health program should be placed under the Public Health Service.

In so far as it is possible, except on a few large reservations that are appropriate for a satisfactory life for the Indians, there should be continued allotment of land with full ownership rights granted to the Indians.

It shall be the aim to provide employment for Indians for all occupations possible in connection with Indian communities.

The general policy should be to increase the facilities for the care and development of the Indian for a short period of time, with the general plan in mind of eliminating the Indian Bureau within a period of, say, twenty-five years.

No new appointments should be made in the Indian Bureau except in following out the above program.

In so far as it is possible, general legislation and general appropriations from the Congress shall be sought, rather than specific legislation for specific Indian groups or to solve individual Indian questions.

A survey shall be made of all existing laws with which the Indian question is involved, so that proper laws can be drawn rescinding former actions which are no longer necessary, and an adequate legislative program developed for the future.

* * * *

MR. WILLIAM LLOYD WARNER, one-time graduate student at the University of California, has completed his field work among the Murngin tribes of Northern Australia and returned to the United States in September, 1929. The researches were conducted under the auspices of the Rockefeller Foundation and the Australian Research Council and were under the general direction of Professor A. R. Radcliffe-Brown. Mr. Warner will be a tutor at Harvard in 1929-1930.

THE ENTIRE COLLECTION of the Academy of Natural Sciences of Philadelphia relating to the archaeology and ethnology of the American Indian has been sold to the Museum of the American Indian, Heye Foundation, at Broadway and 155th Street, New York City, and will be transferred there immediately. The principal part is the Clarence B. Moore collection, said to be the largest and finest known collection from the prehistoric Indian mounds of the Southern United States. The transfer also includes the A. H. Gottschall collection and the S. S. Haldeman collection, both of great scientific value. The Gottschall collection comprises thousands of Indian relics, such as costumes, pipes, weapons and stone work. The Haldeman collection is representative of the archaeology and ethnology of the Indian and was brought together between 1840 and 1870. Mr. Charles M. B. Cadwalader, director of the academy, is reported to have said that the Moore collection "was going at the request of the donor."

DR. HUGO OBERMAIER, professor at the University of Madrid, has been elected an honorary member of the Anthropological Society in Vienna.

A RECONSTRUCTION of the main plaza of the Mayan city of Tikal has been prepared for the hall of civilization of the Buffalo Museum of Science. The city of Tikal was chosen for reproduction because it is an excellent example of the pyramidal style of architecture.

THE SECOND NORTHWESTERN UNIVERSITY expedition to Dutch Guiana for the study of the Negro sailed from New York on June 14, under the leadership of Dr. Melville J. Herskovits, assistant professor of anthropology. In the upper reaches of the Surinam River, Professor and Mrs. Herskovits expect to spend six weeks studying the customs, laws, beliefs and language of the people.

Dr. Louis Captain, member of the *Académie de* Médecine de Paris, Loubat Professor of American Archeology in the *Collège de France*, and Professor of Prehistory in the *École d'Anthropologie de Paris*, died in Paris on September 1.

DR. R. SCHULLER, who returned from Central America some time ago, has been working at Harvard University for some months in order to finish his work on the Maya k'iche language.

THE DEATH is announced of Sir Baldwin Spencer, F.R.S., emeritus

professor of biology in the University of Melbourne, known for his studies of the wild tribes of Australia.

PROFESSOR F. WOOD JONES, Rockefeller professor of physical anthropology in the University of Hawaii, has accepted a professorship of anatomy at the University of Melbourne to succeed Dr. R. J. A. Berry, who recently resigned.

THE UNIVERSITY OF WASHINGTON is embarking on an enlarged program for anthropology, made possible by combining the Washington State Museum with the department of anthropology. Dr. Leslie Spier has been recalled as Professor of Anthropology and appointed director of the museum. Dr. Erna Gunther has been appointed Instructor, while Dr. Melville Jacobs continues as a member of the department. Larger funds are available for field work and publication.

During 1929–30 Dr. Spier will be on leave to carry on a general anthropological survey of the Gilbert and Ellice groups in eastern Micronesia for the Bishop Museum of Honolulu. Dr. Gunther will have charge of the Washington museum during his absence.

NEIL M. JUDD, curator of American archaeology, in the U. S. National Museum, left Washington on May 15 for Flagstaff, Arizona, there to join Dr. A. E. Douglass, of the Steward Observatory of the University of Arizona, and Mr. Lyndon Hargrave, of the Museum of Northern Arizona at Flagstaff, on an archaeological reconnaissance of central Arizona in search of ruins from which charred timbers might be recovered. It is the desire of the present expedition, under the auspices of the National Geographic Society, to obtain sections of timbers cut before 1260 A.D. and thus to bridge the single remaining gap in the "tree ring" chronology now being erected by Dr. Douglass and by means of which it is expected most pre-Spanish ruins of the Southwest can be dated. The current researches are in continuation of the society's archaeological explorations at Pueblo Bonito, New Mexico, from 1920 to 1927, under direction of Mr. Judd.

The CZECH JOURNAL, ANTHROPOLOGIE, has published an anniversary volume in honor of Dr. Ales Hrdlicka's 60th birthday. The publication takes the place of issues 1 and 2 of the 1929 volume, begins with a biographical account of Dr. Hrdlicka in both Czech and English, and contains a considerable number of articles on physical anthropology and related topics, all in English.

THE NATIONAL ACADEMY OF SCIENCES at its annual meeting held in Washington on April 22, 23 and 24 elected new members as follows: Dr. Roger Adams, professor of organic chemistry at the University of Illinois; Irving W. Bailey, associate professor of botany, Bussey Institution, Harvard University; Dr. A. F. Blakeslee, botanist at the Carnegie Institution's station for experimental evolution at Cold Spring Harbor; Dr. James B. Conant, associate professor of chemistry, Harvard University; Dr. Bergen Davis, professor of physics at Columbia University; Dr. C. J. Davisson, physicist at the Bell Telephone Laboratories, New York; Dr. Joel H. Hildebrand, professor of chemistry at the University of California; William Hovgaard, professor of naval design at the Massachusetts Institute of Technology; Dr. Albert W. Hull, research physicist at the General Electric Company's Research Laboratory at Schenectady; Frank Leverett, geologist of the U. S. Geological Survey and lecturer in glacial geology at the University of Michigan; Dr. Paul W. Merrill, astronomer at the Mt. Wilson Observatory, Pasadena; Dr. David H. Tennent, professor of zoology at Bryn Mawr College; Dr. George H. Whipple, dean of the School of Medicine and Dentistry and professor of pathology at the University of Rochester, N. Y., and Dr. Clark Wissler, curator of ethnology at the American Museum of Natural History, New York, and professor of anthropology in the institute of psychology at Yale University.

DR. GEORGE GRANT MACCURDY of Yale University, Director of the American School of Prehistoric Research, has been elected a *Membre Correspondant* of the *Société des Américanistes de Belgique.*

THE NINTH SUMMER SESSION of the American School of Prehistoric Research opened in London on July 1, under the direction of Dr. George Grant MacCurdy of Yale University. The greater part of the summer was spent on the continent, especially in France, where excavation was carried on. Professor and Mrs. MacCurdy sailed from New York on June 15.

HARLAN I. SMITH spent the field season of 1928 in British Columbia, where incidental to collecting ethnological specimens and making motion picture records in the Shuswap, Okanagan, Coast Salish, and Tsimpshian Indian areas he carried on archaeological reconnaissance, making photographs of pictographs and petroglyphs, as well as of specimens in local Museums and collections. Petroglyphs were found overlooking the sea on two points immediately west of Aldridge point some twenty miles west of Victoria. It is

rather remarkable that these should have escaped the attention of archaeologists who have worked in this region for many years. The pictographs on the rock bluff on the west side of Mara lake about six miles south of Sicamous in the Shuswap Indian area were visited; also those of two localities in the Okanagan Indian area, one on the west side of Okanagan lake near Kelowna, and another on the right side of the Penticton-Keremeos road. In the Coast Salish Indian area pictographs were visited about two miles south of Britannia Beach, Howe sound near Vancouver.

UNDER THE AUSPICES of the Division of Anthropology and Psychology of the National Research Council a conference on Midwestern Archaeology was held in St. Louis, Missouri, on May 18, 1929. On the preceding day preliminary meetings were held under the auspices of the committee on State Archaeological Surveys.

THE DEANS of the University of Minnesota recommended to the president that Dr. Albert Ernest Jenks, professor of anthropology, represent recent research work of the faculty in an address before the university convocation on April 18. The address given was entitled "Field Researches in the Culture of Prehistoric Americans," and dealt with the field work in Mimbres culture carried on last summer in New Mexico by Dr. Jenks and four graduate students, in cooperation with Mr. Wesley Bradfield, of the Santa Fe Museum. On February 15 the annual Sigma Xi Address at the University of Minnesota was delivered on the same subject by Dr. Jenks.

THE DEPARTMENT of sociology and anthropology at the University of Chicago has been dissolved and reconstituted as two separate departments. The department of sociology will be under the chairmanship of Dr. Ellsworth Faris, while the chairman for anthropology is Dr. Fay-Cooper Cole.

EDGAR L. HEWETT has resigned as director of the San Diego Museum and has been succeeded by Lyman Bryson, lecturer in anthropology at the State Teachers College. Dr. Hewett had been director of the California museum since its founding, and is also director of the Museum of New Mexico, in Santa Fe.

Mr. Bryson, the new director, has held several posts including that of lecturer at the University of California, head of the publications service of the International Red Cross, in Paris, and teacher at the University of Michigan. Dr. Hewett has been appointed director emeritus.

INDEX TO AUTHORS AND TITLES

ABBOTT, C. G., Ethnological and Archaeological Cooperative Investigation under the Smithsonian Institution, 187

"ABU EL KAYLIK," The Kingmaker of the Fung of Sennar, 232

AMERICAN ANTHROPOLOGICAL ASSOCIATION, Proceedings of, 313; Officers and Members, 1928, 193

AMERICAN ASSOCIATION of Physical Anthropologists, 565

AMERICAN CULTURE, On the Southeast Asiatic Origins of, 554

AMERICAN ETHNOLOGY, Bureau of, Activities of, 361

ANTEVS, ERNST, Review by, 809

ANTHROPOLOGICAL SOCIETY of Washington, 1928, 328

ANTHROPOLOGY, The Influence of on Sociology, 819

ARCHAEOLOGICAL FIELD WORK in North America during 1928, 332

ARCHAEOLOGY in the United States, The Present Status of, 401

ARMER, MRS. L., Activities of, 365

ASHLEY, MARGARET E., Archaeological Survey in Georgia, 343

BEYER, HERMANN, The Supposed Maya Hieroglyph of the Screech-Owl, 34

BOGORAS-TAN, Waldemar G., Activities of, 191, 365; Elements of the Culture of the Circumpolar Zone, 579

BRANNON, PETER A., Archaeological Researches in Alabama, 336

BROWN, CHARLES E., Wisconsin Archaeological Survey, 357

BRYSON, MR., Activities of, 830

CALIFORNIA MORTUARIES, On, 771

CAPITAN, DR. LOUIS, death of, 827

CAVES OF THE UPPER GILA RIVER, New Mexico, 299

CHI LI, DR., Statement by, 188

COLE, FAY-COOPER, Archaeological Field Work of the University of Chicago, 345

COLTON, HAROLD S., Archaeological Field Work in Arizona, 338

COMANCHE DOCUMENT, An Eighteenth Century, 289

COOPER, JOHN M., Anthropological Society of Washington, 1928, 328

COP-ÉH OF GIBBS, The 136

CROSS-COUSIN MARRIAGE and the Culture of the Northeastern Algonkian, 277

CULTURE HORIZONS in the Southwest, 367

CULTURE IN WISCONSIN, A Hopewell Type of, 307

CULTURE OF THE CIRCUMPOLAR ZONE Elements of the, 579

CULTURE TRAITS, Magnitude of Distribution, Centrifugal Spread, and Centripetal Elaboration of, 754

CUMMINGS, BYRON, Archaeological Field Work in Arizona, 337

CZECH JOURNAL, The, Anthropologie, Publications of, 828

DANFORTH, C. H., Activities of, 361

DARLINGTON, H. S., Review by, 807

DAWKINS, SIR WILLIAM BOYD, Death of, 366

DEANGULO, JAIME, A Tfalati Dance-Song in Parts, 496

DEANGULO, JAIME, and FREELAND, L. S., A New Religious Movement in North-Central California, 265

DEGARIS, CHARLES F., Review by, 535

DENSMORE, FRANCES, What Intervals do Indians Sing, 271
DEVRIES, JAN, Review by, 803
DIFFUSION AND INDEPENDENT INVENTION: A Critique of Logic, 491
DISCOVERY IN BEISAN, The, 362
DIXON, R. B., Reviews by, 540, 791
DORRANCE, FRANCES, The Pennsylvania Indian Survey, 355

EDITION, An English, Publication of, 363
ERDBALL, DER, Popular Ethnographic Monthly, 362
ETHNOLOGICAL and Archaeological Cooperative Investigation under the Smithsonian Institution, 187
ETHNOLOGICAL THEORIES, History of, 9
EUGENICAL NEWS, Report in, 361
EVANS-PRITCHARD, E. E., The Morphology and Function of Magic, 619

FEWKES, VLADIMIR J., Review by, 789
FORDE, C. DARYLL, Activities of, 192, Reviews by, 155, 156
FREELAND, L. S. AND DEANGULO, JAIME, A new Religious Movement in North-Central California, 265
FRENCH FOLKLORE SOCIETY, A., 578
FUNKHOUSER, W. D., and WEBB, W. S., The So-called "Hominy Holes" of Kentucky, 701

GODDARD, CHARLES F., Work of New York State Archaeological Association, 353
GODDARD, PLINY EARLE, Death of, 1
GREENMAN, E. F., Work of Ohio State Archaeological and Historical Society, 354

HAHN, DR. EDUARD, Death of, 363
HALL, ROBERT BURNETT, The Société Congo of the Ile À Gonave, 685
HALLOWELL, A. I., Proceedings of the American Anthropological Association, 1928, 313
HALSETH, ODD S., Archaeological Field Work in Arizona, 338
HAMBLY, WILFRID D., The Serpent in African Belief and Custom, 655; The Flexibility of Methodology, 816
HARING, DOUGLAS G., Review by, 792
HARRINGTON, M. R., Archaeological Field Work of the Southwest Museum, 341
HAVASUPAI, Problems Arising from the Cultural Position of the, 213
HAWLEY, FLORENCE M., Prehistoric Pottery Pigments in the Southwest, 731
HELLMAN, DR. MILO, Activities of, 575
HERSKOVITS, MELVILLE J., Reviews by, 525, 796
HEWETT, DR. EDGAR L., Activities of, 577, 830; Announcement by, 575
HEYE, GEORGE G., Activities of, 366; Archaeological Field Work of the Museum of the American Indian, Heye Foundation, 357
HEYMANOVICH, PROFESSOR A. J., Activities of, 189
HINSDALE, W. B., Archaeological Field Work in the University of Michigan, 348
HOFFMAN, DR. FREDERICK L., Activities of, 189
"HOMINY HOLES" of Kentucky, The So-called, 701
HOOTON, E. A., Reviews by, 165, 166, 167, 168
HOUGH, WALTER, Archaeological Field Work in Alaska, 336; in Kentucky, 347; Report, 350
HRDLICKA, DR. ALES, Activities of, 192; Report, 565
HUMAN BIOLOGY, 576

INCA RELICS in the Atacama Desert, Chile, 130
INDIAN GARDEN, An, 363
INDIAN LORE, Course in, 578
INDIAN SITES, A Survey of the, 575
INSTITUT D'ETHNOLOGIE, The, 364
INSTITUTE FOR THE STUDY OF LAW at John Hopkins University, 572
INTERNATIONAL CONGRESS OF AMERICANISTS, The Twenty-third, 182
INTERNATIONAL CONGRESS OF PSYCHOLOGY, The Ninth, 576
INTERVALS DO INDIANS SING, What, 271

JENKS, A. E., Archaeological Field Work of the University of Minnesota, 352
JONES, HORACE, Archaeological Field Work in Kansas, 347
JUDD, NEIL M., Activities of, 828; The Present Status of Archaeology in the United States, 401

KAGAROFF, EUGEN, Of Leo Sternberg, 568
KAHN, MORTON C., Notes on the Saramaccaner Bush Negroes of Dutch Guiana, 468
KARSTEN, PROFESSOR R., Activities 365
KERR, A. A., Archaeological Field Work of University of Utah, 357
KEYES, CHARLES R., Archaeological Field Work in Iowa, 346
KIDDER, A. V., Announcement of The Laboratory of Anthropology at Santa Fe, 571
KINSHIP ORIGINS in the Light of Some Distributions, 710
KISSELL, MARY LOIS, Organized Salish Blanket Pattern, 85
KROEBER, A. L., Archaeological Field Work of the University of California, 340; Pliny Earle Goddard, 1; Honored, 575; Reviews by, 138, 513, 516, 517

LABORATORY OF ANTHROPOLOGY, The, Award of Scholarships, 571
LAFAYETTE NATIONAL PARK MUSEUM, The, 363
LAUFER, BERTHOLD, Archaeological Field Work in North America during 1928, 336
LESSER, ALEXANDER, Kinship Origins in the Light of Some Distributions, 710
LIBBY, O. G., Archaeological Field Work of North Dakota, 354
LIGHT, S. F., Review by, 175
LINTON, R., Review by, 799
LITTLEJOHN, HUGH W., A Northeastern Californian Dug-out Canoe, 776
LOEB, E. M., Shaman and Seer, 60; Reviews by, 146, 795, 802
LOGAN, W. N., Archaeology of Indian Department of Conservation, 346
LOTHROP, SAMUEL K., Resignation of, 363
LOWIE, ROBERT H., Reviews by, 153, 499, 501, 504, 532, 780

MACCURDY, GEORGE GRANT, Activities of, 191, 829; Reviews by, 154, 806
MACLEOD, WILLIAM CHRISTIE, On California Mortuaries, 771; On the Southeast Asiatic Origins of American Culture, 554; The Origin of Servile Labor Groups, 89
MARETT, DR. ROBERT RANULPH, Activities of, 364
MARTIN, PAUL S., Archaeological Report of the State Historical Society of Colorado, 342
MASON, J. ALDEN, Proceedings of the American Anthropological Association, 313
MAYA CHRONOLOGY, Glyph G of the Lunar Series, 233
MCGOVERN, DR. WILLIAM M., Activities of, 191
MCKERN, W. C., Archaeological Field Work of the Milwaukee Public Museum, 359; A Hope-

well Type of Culture in Wisconsin, 307; Regarding the Origin of Wisconsin Effigy Mounds, 562
MEAD, MARGARET, Activities of, 190; Reviews by, 177, 582
MERRIAM, C. Hart, The Cop-eh of Gibbs, 136
METFESSEL, DR. MILTON, Activities of, 362
METHODOLOGY, The Flexibility of, 816
MIDDLE-AMERICAN RESEARCH, The Department of, 364
MILLER, G. S., Review by, 145
MITALSKY, FRANK, Excavations in Phoenix, 340
MOORE, CLARENCE B., Collection of Archaeology, 827
MOOREHEAD, W. K., Archaeology in Georgia, 343; in Maine, 348; in the University of Illinois, 344; The Mound Builder Problem to Date, 544
MORICE, Father A. G., Activities of, 578
MORPHOLOGY AND FUNCTION OF MAGIC, The, 619
MORRIS, EARL H., Archaeological Field Work in the University of Colorado Museum, 339
MOUND BUILDER PROBLEM TO DATE, The, 544
MUSEUM DIRECTORS, An International Congress of, 362
MUSEUM OF CANADA, The National Activities of, 365
MUSEUM OF THE UNIVERSITY OF PENNSYLVANIA, The, Activities of, 363

NATIONAL ACADEMY OF SCIENCES, Meeting of, 829
NELSON, N. C., Activities of, 577; Report of the Twenty-third International Congress of Americanists, 182; Review by, 152
NICHOLS, H. W., Inca Relics in the Atacama Desert, Chile, 130
NORTH-CENTRAL CALIFORNIA, A New Religious Movement in, 265
NORTHEASTERN CALIFORNIAN DUG-OUT CANOE, A, 776
NORTHEAST COAST WEAVING, The Possible Middle American Origin of, 114
NORTHWESTERN UNIVERSITY, Second Expedition of, 827
NUTTALL, MRS. ZELIA, Activities of, 364

OBERMAIER, DR. HUGO, Activities of, 827
OETTEKING, DR. BRUNO, Activities of, 364; Review by, 537
OLSON, RONALD L., The Possible Middle American Origin of Northwest Coast Weaving, 114
ORGANIZED SALISH BLANKET PATTERN, 85
PACIFIC SCIENCE ASSOCIATION, The, Announcement by, 188
PALEOLITHIC DISCOVERIES IN NORTHERN IRAQ, 583
PARKER, ARTHUR C., Archaeological Work of Rochester Municipal Museum, 352
PARSONS, ELSIE CLEWS, Ritual Parallels in Pueblo and Plains Cultures, with a Special Reference To the Pawnee, 642
PEARCE, J. E., Archaeological Survey of the State of Texas, 355
PEARL, PROF. RAYMOND, Activities of, 190, 191
PLANTS OF JAMAICA USED BY NATIVES FOR MEDICINAL PURPOSES, 531
POLICIES OF THE INDIAN BUREAU, The New, 825
POTOMAC VALLEY INDIANS, The Artifacts of the, 122
"PREHISTORIC MAN," Lecture, 574
PREHISTORIC POTTERY PIGMENTS in the Southwest, 731
PREHISTORIC RESEARCH, The American School of, 187, 575
PREHISTORIC ROCK BASINS in the Sierra Nevada of California, 419

PROMOTION OF CHINESE STUDIES, A Committee on the, 361
PUEBLO AND PLAINS CULTURES, Ritual Parallels in, 642

RADIN, PAUL, History of Ethnological Theories, 9
RASMUSSEN, DR. KNUD, Activities of, 577
REDFIELD, ROBERT, The Material Culture of Spanish-Indian Mexico, 602
REIGN OF HUEMAC, The, 667
REJOINDER TO REVIEWERS, A, 560
RENAUD, DR. E. B., Activities of, 190
REUTER, E. B., Review by, 501
REYNOLDS, EDWARD, Activities of 340, 351; Archaeological Field Work of Peabody Museum, 357
ROBINSON, ARTHUR E., "Abu El Kaylik," The Kingmaker of the Fung of Sennar, 232
ROCHESTER MUNICIPAL MUSEUM, The, Research Records, 192
ROCKEFELLER, JOHN D., Gift, 366
ROGERS, MALCOLM J., Archaeological Field Work of the San Diego Museum, 341; The Stone Art of the San Dieguito Plateau, 454
ROTH, WALTER E., Appointment of, 578; Weaving in South America, 560
ROWLAND, DUNBAR, Survey of the Mississippi Department of Archives and History, 349

SALESKI, R. E., Review by, 804
SARAMACCANER BUSH NEGROES of Dutch Guiana, Notes on the, 468
SCHULLER, DR. R., Activities of, 827
SCREECH-OWL, The Supposed Maya Hieroglyph of the, 34
SELIGMAN, PROF. E. R. A., Activities of, 366
SERPENT IN AFRICAN BELIEF and Custom, The, 655
SERVILE LABOR GROUPS, Origin of, 89
SETZLER, FRANK, Archaeological Survey in Indiana, 345
SHAMAN AND SEER, 60
SHAPIRO, DR. H. L., Activities of, 574
SIMMS, STEPHEN C., Activities of, 189
SKINNER, H. D., Review by, 800
SMITH, HARLAN I., Activities of, 828; Archaeological Field Work in North America during 1928, 332
SMITH, MAURICE G., The Influence of Anthropology on Sociology, 819; Reviews by, 509, 785, 786, 787
SMITH, VICTOR J., Archaeological Survey of Big Bend Territory, 356
SOCIAL SCIENCE ABSTRACTS, 366
SOCIAL SCIENCE RESEARCH COUNCIL, 823
SOCIÉTÉ CONGO of the Ile À Gonave, 685
SOCIOLOGICAL PRESS, The, Activities of, 365
SOCIOLOGY AND ANTHROPOLOGY, The Department of, 830
SOUTHWEST MUSEUM, The Annual Report of the, 578
SPANISH-INDIAN MEXICO, The Material Culture of, 602
SPENCER, SIR BALDWIN, Death of, 827
SPIER, LESLIE, Activities of, 577, 828; Problems Arising from the the Cultural Position of the Havasupai, 213; Reviews by, 140, 169, 521
SPINDEN, DR. H. J., Activities of, 189
STEFANSSON, VILHJALMUR, Activities of, 190
STEGGERDA, MORRIS, Plants of Jamaica used by Natives for Medicinal Purposes, 431
STERNBERG, LEO, Death of, 568

STEWARD, JULIAN H., Diffusion and Independent Invention: A Critique of Logic, 491
STEWART, GEORGE W., Prehistoric Rock Basins in the Sierra Nevada of California, 419
STIRLING, MATTHEW W., Activities of, 189; Report of Archaeological Field Work in Colorado 341; in Florida, 343; in New Mexico, 350
STONE AGE MAN, Descendants of, 824
STRONG, W. D., Cross-Cousin Marriage and the Culture of the Northeastern Algonkian, 277
STURTEVANT, PROF. EDGAR H., Activities of, 576
SWANTON, JOHN R., The Tawasa Language, 435

TAWASA LANGUAGE, The, 435
TAYLOR, GRIFFITH, A Rejoinder to Reviewers, 560
TERRY, R. J., Archaeological Survey of Missouri, 349
TFALATI DANCE-SONG IN PARTS, A, 496
THOMAS, ALFRED B., An Eighteenth Century Comanche Document, 289
THOMPSON, J. ERIC, Maya Chronology: Glyph G of the Lunar Series, 223
TODD, DR. T. WINGATE, Activities of, 191

ULKE, TITUS, The Artifacts of the Potomac Valley Indians, 122
UNIVERSITY OF AMSTERDAM, Celebration by, 189
UNIVERSITY OF CHICAGO, Department of Sociology and Anthropology, 830
UNIVERSITY OF CHICAGO PRESS, 574
UNIVERSITY OF MINNESOTA, The Deans of, 830
UNIVERSITY OF WASHINGTON, Activities of, 828

VAILLANT, DR. GEORGE, Activities of, 362
VON HÜGEL, Baron Anatole, Death of, 191

WALLIS, WILSON D., Magnitude of Distribution, Centrifugal Spread, and Centripetal Elaboration of Culture Traits, 574
WARNER, WM. LLOYD, Activities of, 826
WATERMAN, T. T., Culture Horizons in the Southwest, 367
WATSON, EDITHA L., Caves of the Upper Gila River, New Mexico, 299
WEAVING IN SOUTH AMERICA, 560
WEBB, W. S., Archaeological Work of the University of Kentucky, 348
WEBB, W. S., and Funkhouser, W. D., The So-called "Hominy Holes" of Kentucky, 701
WEBSTER, HUTTON, Review by, 507
WHITE, DR. LESLIE A., Activities of, 192
WHORF, B. L., The Reign of Huemac, 667
WILLOUGHBY, CHARLES C., Review by, 519
WISCONSIN EFFIGY MOUNDS, Regarding the Origin of, 562
WISSLER, CLARK, Archaeological Field Work, 337, 351
WOOD JONES, PROF. F., Activities of, 828

ZEITSCRIFT FÜR MORPHOLOGIE und Anthropologie, Activities of, 576